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ABSTRACT

This book and the conference that gave rise to its chapters were conceived as a means of investigating how to translate important sets of research findings in reading and reading instruction into practice. Topics for inclusion were selected for their high priority in terms of practice or policy; for their potential for making a substantial difference in reading instruction. Chapter authors were encouraged to think of K-12 practitioners and policymakers at local, state, and national levels as their intended audience--they were to focus on what works in the classroom to improve reading achievement. The first chapter in the book is: "Introduction and Overview" (M.L. Kamil; J.B. Manning; H.J. Walberg). Under Part I, Reading Research and Assessment, are the following chapters: (2) "Successful Uses of Computer Technology for Reading Instruction" (H.S. Kim and M.L. Kamil); (3) "How Can Children Be Taught to Comprehend Text Better?" (M. Pressley and K. Hilden); (4) "Interventions for Children Experiencing Early Reading Difficulties" (R. Barr); and (5) "From Policy to Practice: Using Literacy Standards in Early Reading Instruction" (D. Birdyshaw; E. Pesko; K. Wixson; N. Yochum). Under Part II, Reading Instruction and Practice, are these chapters: (6) "Improving Reading Achievement through Professional Development" (D. Strickland); (7) "Reading in Discipline/Content Materials" (D.E. Alvermann); (8) "Engagement and Motivation in Reading Instruction" (J.T. Guthrie); (9) "Good First Teaching: Making the Critical Difference for All Students" (G.S. Pinnell); and (10) "Conclusions and Recommendations" (H.J. Walberg; J.B. Manning; M.L. Kamil). Each chapter includes references. (NKA)

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Successful Reading Instruction

Edited By
Michael L. Kamil
JoAnn B. Manning
Herbert J. Walberg

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A Volume in Research in Educational Productivity

Laboratory for Student Success
The Mid-Atlantic Regional Educational Laboratory

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SUCCESSFUL READING INSTRUCTION

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CONTENTS

1. Introduction and Overview
Michael L. Kamil, JoAnn B. Manning, and Herbert J. Walberg 1

Part I
Reading Research and Assessment

2. Successful Uses of Computer Technology for Reading Instruction
Helen S. Kim and Michael L. Kamil (Stanford University) 11

3. How Can Children Be Taught to Comprehend Text Better?
Michael Pressley and Katherine Hilden (University of Notre Dame) 33

4. Interventions for Children Experiencing Early Reading Difficulties
Rebecca Barr (National-Louis University) 53

5. From Policy to Practice: Using Literacy Standards in Early Reading Instruction
Deanna Birdyshaw, Ellen Pesko, Karen Wixson, and Nina Yochum (University of Michigan) 75

Part II
Reading Instruction and Practice

6. Improving Reading Achievement Through Professional Development
Dorothy Strickland (Rutgers University) 103

7. Reading in Discipline/Content Materials
Donna E. Alvermann (University of Georgia) 119

8. Engagement and Motivation in Reading Instruction
John T. Guthrie (University of Maryland) 137

9. Good First Teaching: Making the Critical Difference for All Students
Gay Su Pinnell (Ohio State University) 155

10. Conclusions and Recommendations
Herbert J. Walberg, JoAnn B. Manning, and Michael L. Kamil 183

About the Authors 189

CHAPTER 1

INTRODUCTION AND OVERVIEW

Michael L. Kamil, JoAnn B. Manning, and Herbert J. Walberg

Early in 2001, President Bush announced his Early Reading and Reading First initiatives, which aim to improve early literacy skills for preschool children and reading literacy skills for children in kindergarten through third grade. The president's plans also included a new Reading First State Grants program that would help states and local educational agencies implement comprehensive K–3 reading instruction grounded in scientifically sound reading research. The president's initiatives were timely, given national concern about children's scores on reading assessments and increasing interest in effective reading instruction among researchers.

Research related to reading has been vigorous in recent years. Three major efforts to review that research have appeared since 1998. First, the National Research Council produced *Preventing Reading Difficulties in Young Children.* Second, the third volume of the *Handbook of Reading Research* was published. Third, the National Institute of Child Health and Human Development issued the *Report of the National Reading Panel: Teaching Children to Read.* These reviews have highlighted the progress evident in the latest research. Despite continuing gaps in our knowledge, many findings have converged to indicate that advances have been made in understanding how reading is acquired.

Major differences exist among the three reviews with regard to the scope of the issues addressed. *Preventing Reading Difficulties* was specifically concerned with the issue of preventing children from failing to learn to read. The volume focused on the interventions most important for chil-

dren who might be at risk for failure. Therefore, it was appropriate that a consensus was reached among researchers.

The *Handbook* volume undertook a broader charge: to analyze the most important research areas since the publication of the previous *Handbook* volume in 1991. Because of the broad range of questions addressed in the latest volume, a combination of methods was appropriate in order to produce a snapshot of current reading research. Topics were determined by careful analysis of types of research conducted since the last volume was published. Reviews of research on those topics were prepared by 87 writers. The reviews, containing over 4,000 citations to original research, combined historical analyses, research syntheses, and conclusions about future research directions.

The *Report of the National Reading Panel* reviewed the research on reading instruction, having been charged with determining what "works." The report emphasized methods that have been researched and found effective for instruction of all students. In this case, the result was most appropriately an evidence-driven synthesis. Five major research areas were examined. The report pointed out that many findings were not sufficiently specific to offer direct guidance to practitioners about how to implement the findings. Clearly, the ability to translate basic research findings into practice has lagged behind the ability to conduct the research.

This volume and the conference that gave rise to its chapters were conceived as a means of investigating how to translate important sets of research findings in reading and reading instruction into practice. The goal was to determine how best to implement what we know and how to make the most informed judgments in those cases where research offers less guidance. Topics for inclusion were selected for their high priority in terms of practice or policy: for their potential for making a substantial difference in reading instruction. The chapter authors were encouraged to think of K–12 practitioners and policymakers at local, state, and national levels as their intended audience. They were to endeavor to explain and interpret the latest and most promising research in reading and its instruction in a manner useful to the teachers and other leaders responsible for passing along to students the benefits of what has been learned about reading. That is, the authors were to focus on what works in the classroom to improve reading achievement.

We are pleased with how each author rose to the challenge of the task. The chapters deal with timely issues and provide overviews, critiques, and findings that are rich in practical implications for strengthening K–12 reading instruction. While their overarching concern has been to make research findings useful, the authors have focused on two distinct areas of concern: (a) reading research and assessment and (b) reading instruction and practice. The chapters on research and assessment deal with computer

technology in reading, reading comprehension, interventions for reading difficulties, and literacy standards and assessment. The chapters on instruction and practice deal with professional development for reading teachers, discipline/content reading, reading engagement and motivation, and effective early reading instruction. Each chapter is summarized below.

The four chapters on research and assessment issues begin with the examination by Helen S. Kim and Michael L. Kamil of the small body of research on the use of computer technology for reading instruction. Kim and Kamil discuss the uses of computers for reading, writing, second-language learners, and at-risk learners. They also explore instructional considerations, future applications, limitations, and policy implications related to computer technology. In direct instruction of basic skills, computers offer interactive programs that provide corrective feedback and incentives. Some programs give beginning readers speech feedback that can augment phonological awareness. Computers also allow students to share work and conduct research effectively. Multimedia tools can enhance reading comprehension by integrating dynamic visual information with text, while vocabulary tools like visual prompts have been shown to increase word learning in elementary-school readers. Sophisticated word-processing programs facilitate writing tasks, especially revision. For second-language learners, the simultaneous visual and verbal support and electronic dictionaries available are particularly helpful, and for at-risk learners, assistive technologies that provide additional skill practice have fostered reading gains. Teachers using these powerful new reading tools should bear in mind that students often need direct instruction in computer skills and in using reading technology. Especially important is direct instruction in strategies to link textual and visual data; such strategies are correlated with gains in comprehension and recall.

Kim and Kamil indicate that in the future, improved speech technology will help beginning readers relate spoken and written language, while advances in artificial intelligence promise to facilitate interactive learning and Internet research. Although more focused, interdisciplinary experiments, for example on the cognitive and affective processes involved in reading multimedia text, are needed, support exists for ongoing integration of technology with traditional instruction and with supportive instruction of special populations. The authors remind policymakers that computer technology can be a cost-effective and beneficial means of improving literacy for all students, but only if the instruction necessary to using these powerful tools is optimally implemented.

The next chapter, by Michael Pressley and Katherine Hilden, focuses on improving children's reading comprehension. The authors define good reading in terms of active comprehension and interpretation of texts, not merely in terms of word recognition. Pressley and Hilden review compo-

nents of skilled comprehension that should be goals of instruction. Skilled readers construct meaning before, during, and after reading, engaging in five key functions: identification of important information, making conscious inferences, integrating parts of texts, interpreting works, and monitoring difficulties in comprehension. The authors also discuss instruction in strategies that foster comprehension. Most research has focused on instruction in individual strategies to improve memory and comprehension. Such strategies include self-questioning, forming mental images, summarizing, and attending to key structural elements. The authors point out that individual strategies instruction needs to be sustained, transferred to new situations, and monitored for effectiveness. This happens when the instructional focus is not on single strategies but on the coordination of multiple strategies in reading a variety of texts.

Pressley and Hilden explain that effective multiple strategies instruction tends to be flexible, involve interaction between teacher and student, provide extensive practice, rely upon prior knowledge, and combine several mutually reinforcing strategies. The authors highlight the transactional strategies approach, which teaches a repertoire of strategies and involves active transactions between text and reader. They also review other components in high-quality comprehension, including vocabulary building, context skills, and cultural knowledge. They conclude with the intriguing idea that teachers' resistance to comprehension may be overcome if they become better readers themselves, practicing the strategies they want students to use.

In her chapter on interventions for early reading difficulties, Rebecca Barr surveys research on early reading interventions, drawing implications for school policy and providing suggestions for implementation and assessment of successful interventions. Research shows that the development of both print-related knowledge and comprehension skills needs to be supported in early grades; interventions should not duplicate existing classroom programs in these areas. Interventions for meeting the needs of classes, subgroups, or individuals tend to be of two types: focused ones for support of particular reading skills and comprehensive ones that supplement classroom programs for support of a range of skills. Barr discusses interventions of both types that have been shown effective for early readers. Focused interventions in phonemic awareness help the earliest readers, while phonics instruction tends to help kindergarten and first-grade students most. Various strategies for increasing text fluency have been examined; oral reading strategies seem to have modest effects on reading improvement in early readers. Additionally, storybook reading is believed to be an effective focused intervention.

Considering comprehensive interventions, Barr indicates that the Reading Recovery program for individual students for whom classroom programs

have been ineffective has shown significant benefits. Comprehensive tutorial and small-group programs have been researched. Though both show advantages for early readers, tutorial programs may be more effective. Implementation policies for early reading interventions, Barr concludes, need to be grounded in good assessment of needs. She recommends assessments at the beginning and end of school years as a means of guiding implementation of focused interventions, and she recommends ongoing assessment to identify children in need of comprehensive intervention. Her survey and recommendations establish that intervention beyond classroom programs can definitely help schools meet the goal of teaching all students to read.

Deanna Birdyshaw, Ellen Pesko, Karen Wixson, and Nina Yochum focus on the role of literacy standards and assessment in early reading instruction, showing how teachers use standards and analysis of student work to guide instruction. The authors describe a professional-development project, *Exemplars*, created to research implementation of K–3 standards and benchmarks in Michigan and to provide models for successful implementation. In this project, involved teachers met regularly to develop common understandings about the meaning of the standards, what they looked like in practice, and ways of assessing student progress. The authors examine the work of three different *Exemplars* teachers having various levels of experience, working with diverse student groups, and enjoying different levels of administrative support for standards implementation. The teachers succeeded in combining standards and benchmarks with their individual instructional strategies, and they found that alignment of standards, instruction, and assessment was beneficial to their practices and their students.

The authors conclude that understanding variations in individual teachers' instructional contexts is important for illuminating the connection between standards reform and student achievement. Standards-based instruction works when these variations are supported in professional-development efforts. Conversation with other teachers and encouragement to analyze student work in light of standards can motivate improvements in instruction and learning. There appears to be a developmental progression in learning to implement and assess standards effectively. The authors' research suggests that policymakers at all levels should involve teachers as partners in constructing standards-based practices.

The four chapters on instruction and practice begin with the examination by Dorothy S. Strickland of professional development as a means of improving reading achievement. She argues that staff development for reading teachers must progress beyond the traditional program of occasional inservice days and workshops. She links professional development to statewide performance standards and initiatives for teaching improvement, showing that systemic reform in professional development leads to improved literacy

instruction. Strickland emphasizes three difficult issues faced by researchers and practitioners involved in implementing reading reform.

First, it is often a challenge to make a convincing case to administrators and policymakers for comprehensive professional development. Strickland advocates a well-targeted plan and integration with existing school and district structures. Second, professional developers need to understand the complexities of the adult learners they educate. According to Strickland, it is essential to take teachers' prior knowledge, goal-directed orientation, and flexibility as learners into account. Third, professional development in urban contexts, where improvement in literacy instruction is often most needed, is confronted with sometimes competing demands for raising cultural awareness and for implementing steps that will improve instruction. It is important, Strickland urges, not to allow either cultural or instructional needs to dominate urban professional development; both must be addressed in a collaborative framework. Strickland closes by offering practical, research-based strategies for professional development of literacy instruction, including faculty study groups as well as peer and mentor coaching.

Donna E. Alvermann examines practices used beyond the early grades for learning to read discipline/content materials effectively. She begins with a history of content area reading research and practice, tracing the development of the field from study-skills approaches designed for remediation to more integrated approaches in which content-related reading strategies are taught along with content. Next, Alvermann links current research and practice in content area reading with principles of effective teaching. She reviews quantitative and qualitative research on four common methods of teaching content reading: text comprenension strategies, preteaching content vocabulary, using content-related discussion, and integrating literacy instruction across the curriculum.

Alvermann's review shows that all four methods have been found to coincide with accepted principles of good teaching, although the concept of integrated instruction is too broad to provide conclusive evidence of its effectiveness. In closing, Alvermann makes the crucial point that although we know what works generally in teaching content reading, we still know too little about best practices for English-language learners and others for whom print texts are not primary means of learning.

John T. Guthrie points out that many young readers lack both the competence and commitment required for school-relevant literacy. He argues that teachers need to foster readers who are not only skilled but also motivated, since motivation can spur skill building, which stimulates further motives for reading. He maintains that competent readers are intrinsically motivated. Guthrie suggests that building classroom engagement in reading can help develop intrinsic motivation. Interest in texts or objects is either

individual, enduring through various encounters, or situational, connected with transitory affective engagement. Children's situational interest is easily engaged through hands-on classroom activities like encounters with animals. Such interest can direct reading activities, which can foster the emergence of intrinsic motivation and improved reading skills.

Guthrie illustrates this argument with a fascinating classroom example in which a third-grade teacher provides a scaffold for the construction of intrinsic motivation through combining hands-on and textual study of birds. The example illuminates six principles for supporting engaged reading: encouraging reading for knowledge goals, linking the real world to reading, supporting students' autonomy, using diverse texts, sharing knowledge through group activities, and teaching cognitive strategies like questioning and organizing to foster comprehension. Guthrie reports on research that tests these principles in the instructional framework for elementary-school readers, Concept-Oriented Reading Instruction, developed by him and his colleagues. Implementation of the framework has shown that improvement in reading strategies and intrinsic motivation are interlocked. This research supports further integration into classrooms of principles that help young readers become active participants in their growth as seekers of knowledge.

In the final chapter on instruction and practice, Gay Su Pinnell focuses on the nature of strong early literacy instruction. To establish early literacy, children must understand that written language is meaningful and enjoyable. They must explore print concepts, distinguish sounds and letters, and understand letter–sound connections. From these fundamentals they must develop word recognition, attend to larger word patterns and connections between words, and learn word meanings. Finally, they must use various word-solving strategies while reading and writing.

To foster these early understandings, Pinnell explains, teachers must use comprehensive instructional approaches allowing for skill transfer. Effective approaches to reading include oral, guided, and independent instruction, while approaches to writing include group writing and workshops. Further, comprehensive word-study instruction using minilessons can consolidate basic understandings. Pinnell emphasizes that professional development is crucial to effective instruction. Teachers must address students' complex individual needs, and to do so, teachers must know about the complexities of developmental paths to literacy. Pinnell describes a research-based, comprehensive, and systemic school-development initiative developed by her and her colleagues. The initiative emphasizes professional development, featuring in-school literacy coordinators available for teacher coaching, ongoing training, and informal interactions. The initiative's work supports research indicating that strong early literacy requires systemic change, professional development, and broad collaboration.

All the chapters were first presented as papers at a conference convened by the Mid-Atlantic Regional Educational Laboratory, the Laboratory for Student Success (LSS) at Temple University Center for Research in Human Development and Education. The conference took place in Washington, DC, in November of 2001. The conference focused on determining what we know about reading instruction and implementing it effectively. The papers framed discussion among about 100 educators, researchers, policymakers, and parents who were invited to discuss the implications of the papers and to discuss their experiences, concerns, and lessons learned. The conference featured general discussion of papers among authors, discussants, and other participants as well as small working groups focused on developing next-step recommendations for improving the links between research and practice. Working groups were asked to consider researcher, policymaker, and practitioner steps and to consider the importance of collaboration among homes, communities, and schools. Both general and working-group discussions were lively and productive.

The recommendations from the groups are summarized in the final chapter of the volume. While not all conference participants agreed on all points, the groups were able to reach considerable consensus. Their conclusions echoed several recurring themes and common recommendations, including the following. It was generally agreed that students will benefit when reading researchers and educators collaborate more closely. External reading assessments provided by the national emphasis on standards can be constructively aligned with classroom assessments. Sustained and continual professional development in reading instruction, focused on student and school needs, should be fostered. Teachers, schools, and students should be provided with full access to an abundance of reading resources, including technological aids to learning. Young readers can benefit from sharing of knowledge and responsibility between parents and schools. Finally, the results of reading research need to be communicated effectively to policymakers and practitioners.

Both the conference and this volume were sponsored by LSS and the Office of Educational Research and Improvement. The editors would like to thank LSS staff for assistance in organizing the conference and producing the volume. Marilyn Murphy played a critical coordinating role to ensure a well-managed and productive conference. Mark Rohland provided editorial support to ensure timely publication of the volume. With the authors, the sponsoring agencies have helped us contribute to a goal that conference participants identified as crucial to improved reading instruction: dissemination of research and practical knowledge in an understandable form that can facilitate the policies and classroom efforts that lead to successful reading instruction.

Part I

READING RESEARCH AND ASSESSMENT

CHAPTER 2

SUCCESSFUL USES OF COMPUTER TECHNOLOGY FOR READING INSTRUCTION

Helen S. Kim and Michael L. Kamil

Computers are the latest technology to affect the classroom. In what follows, we examine successful uses of computers for reading, learning to read, and other related activities. In each section, we briefly discuss the research that has been done and come to a conclusion about how to use the results of that research in the classroom.

Computers in reading have a relatively short history. The first documented uses of computers for reading instruction can be found in Atkinson and Hansen (1966–1967). In recent years, there has been great interest in computers in all sorts of educational contexts. Despite this, there has been a significant lack of research on the issues of reading and computers (Kamil & Intrator, 1998; Kamil, Intrator, & Kim, 2000). This lack of research often qualifies the strength of some of the conclusions that can be made about using computers for reading and reading instruction. In what follows, we attempt to make it clear when "what works" is based on solid research and when it is more speculative.

After examining the use of computers in reading instruction and the research support for that use, we have included a section on computers and writing. We believe that reading and writing should be taught together and that the computer is a particularly important tool in teaching writing (Kamil et al., 2000). In addition, we have included sections on using computers for comprehension and vocabulary support, beginning readers, sec-

ond-language students, and at-risk students. Considerations for the successful implementation of computers for reading instruction are presented as well as some of the future applications of computers for reading instruction that appear encouraging. Some of the current limitations of using technology are discussed, and we conclude with a section on implications of the research for policy decisions. While these last sections are not about reading alone, much of the research is involved with reading and shows a great deal of promise.

HOW ARE COMPUTERS BEING USED IN READING INSTRUCTION?

Computers have been used to deliver a diverse array of literacy activities. Initially, the use of computers for reading instruction was often merely a replacement of traditional reading activities with their electronic counterparts, such as the electronic presentation of conventional text or computerized versions of worksheets. Advances in technology have expanded the possibilities for supporting reading instruction. From the instruction of basic skills to the production of multimedia presentations and projects, computers are proving useful in a variety of practical and creative ways. In the classroom context, computers offer options for supporting shared literacy activities, such as classroom research and group projects or presentations. This section presents a brief overview of some of the current ways computers are being used for reading instruction; more detail will be provided in subsequent sections.

Direct Instruction

One practical application of computers is for the direct instruction of basic skills, such as phonics, typing, spelling, and vocabulary instruction. Through repetitive drill and practice, tutorials, games, and other interactive activities, computers can provide both general instruction and targeted practice of specific skills. Many instructional programs incorporate animation, sound effects, and the aid of popular cartoon characters to reinforce and teach literacy skills in a more engaging format. One particularly effective characteristic of computers for direct instruction is the ability to provide instant feedback to the learner. Positive reinforcement can be given for correct answers, while incorrect answers can be addressed with immediate corrective feedback. Some computer programs provide incentives for students to progress through the program, such as games or challenges at the end of each lesson. As students complete lessons and advance to the

next level of difficulty, they can actively monitor their progress toward skill mastery. Teachers may also find it useful to track individual and classroom progress through the computer program in order to locate common areas of strengths and weakness among students.

Computer Activities

Computers are used not only for literacy instruction but also for affording students various opportunities to create, share, and present their own work. Several software programs have been specifically designed to be simple for children to use. For example, Kid Pix is a software program designed to help kids easily create graphics, multimedia projects, and presentations. Finished multimedia products can then be put online and shared with others over the Internet. Computers have also significantly transformed the process of writing papers. Word-processing programs now allow students to easily revise and edit documents without the copious work traditionally involved in revising paper formats. Popular programs such as Microsoft Word offer students additional writing assistance with a grammar and spelling checker, a thesaurus, and even help with formatting letters, reports, and resumes.

Another notable use of computers for literacy instruction involves the use of the Internet. With the rapid proliferation of classrooms that are connected to the Internet, many teachers are incorporating online sources of information and encouraging students to use Internet resources. Whether researching information online, exchanging e-mail correspondence, or creating webpages, students are using the Internet for a wide range of classroom and homework activities. The Internet also supports a special kind of electronic document commonly referred to as hypertext. Hypertext documents contain links to additional multimedia information, such as pictures, articles, definitions, and webpages. In contrast to traditional texts, the nature of hypertext documents requires that readers navigate through linked information and make decisions about whether to skip or pursue links.

Electronic References

The use of electronic dictionaries and multimedia encyclopedias with enhanced search capabilities, visual representations, and additional links to multimedia information is also becoming more commonplace in the classroom. Electronic versions of dictionaries and encyclopedias offer many features that are not possible within traditional formats. For exam-

ple, a student looking for information on elephants in a multimedia encyclopedia might have the option to watch a video of elephants, hear elephant sounds, and pursue links to related websites and current articles. Animated pictures, video, audio, and interactive activities have also been used to enhance storybooks and illustrate conceptual information.

Summary

As can be seen, computers can be applied to reading instruction in many practical and creative ways. Given the many possible uses for computers, in the following section, we explore the research on how technology has been effectively used for reading instruction in particular contexts. Collectively, these studies provide compelling support for the benefits of using computers to support literacy instruction.

WHY WOULD ANYONE WANT TO USE COMPUTERS FOR READING?

The use of computers can offer more efficient alternatives for some traditional literacy activities, as we have shown. In writing papers, computers allow students to easily make revisions such as inserting or deleting paragraphs, rearranging sentences, and fixing small errors without the copious effort of recopying associated with the traditional paper format. Other tasks, such as searching for information or dictionary definitions, are also typically faster on the computer, and electronic searches can instantly retrieve the target information. The expedience and convenience of electronic searches may encourage readers to use functions such as electronic dictionaries, thesauruses, and encyclopedias more than they use their traditional counterparts.

In addition to enhancing traditional literacy tools, computer technologies can support literacy activities in unique ways. Students can use the computer to monitor spelling and grammar, pronounce difficult words, and even translate foreign language passages in a matter of seconds. We are just beginning to understand many of the cognitive and affective consequences of incorporating computer technologies for literacy instruction and to understand the implications for practice. In the following section, we briefly highlight findings in the areas of word processing, diverse learners, and motivation.

Computer Tools

Computer tools have been found to be helpful for supporting literacy in many contexts. For example, studies comparing students who use word processing with those using pen and paper typically show that the word-processing students produce a higher quality of writing (e.g., Bangert-Drowns, 1993). Multimedia presentations of information have been found to be a helpful tool for facilitating comprehension (e.g., Sharp et al., 1995). Computer assistance has been successful in teaching reading skills such as spelling and phonics. There is also some empirical research to support the idea that adding speech to reading at the computer can assist students in learning to read (Davidson, 1994; National Reading Panel, 2000). Reinking and Rickman (1990) and others have found support for augmented learning in comparison with performance in conventional text formats when offering participants computer assistance with literacy tasks.

Diverse Learners

Computer tools can help facilitate literacy instruction for diverse learners. Through individualizing instruction according to the task and learner, computers can provide specialized assistance. Second-language learners have benefited from computer support on various tasks, most notably with vocabulary definitions. For example, Knight (1994) found that electronic dictionaries had a significant effect on comprehension and vocabulary acquisition for college students learning a foreign language, and Leffa (1992) found that nonnative English students with electronic glossaries had higher comprehension scores on text passages than students with traditional dictionaries.

Students facing learning challenges have also benefited from computer instruction. In a study of preschool students at risk for learning disabilities, Mioduser, Tur-Kaspa, and Leitner (2000) found that computer-based instruction was very effective for teaching early reading skills such as phonological awareness, letter naming, and word recognition. As will be discussed in more detail in a subsequent section, providing ample opportunities for targeted practice and instruction through the computer can help teach early reading skills and vocabulary.

Computers and Motivation

In addition to learning outcomes, several studies have also looked at the possible motivational effects of using computers, especially with special pop-

ulations. In the context of reading and writing tasks, various studies have found positive effects of using computers to augment engagement and interest (e.g., Daiute, 1983; Montague, 1990). In particular, students with learning difficulties have demonstrated increased motivation for literacy tasks with technological assistance (e.g., Cutler & Truss, 1989; Elkins, 1986).

Summary

Collectively, these studies illustrate how technology can have important implications for reading instruction. Whether used as a resource, presentation medium, or instructive tool, technology is rapidly transforming the process and form of many literacy activities, from writing book reports to learning phonics. We now take a closer look at the four areas in which we feel that technology has the most potential to support reading instruction in the twenty-first century. The four areas are the use of technology as an assistive tool in writing, technology to augment comprehension, technology for direct instruction of beginning reading skills and vocabulary, and technology to support the special populations of second-language and at-risk learners. For each area, we highlight research findings and then offer practical implications for instruction.

COMPUTERS AND WRITING

Research

The role of writing as an integral component of reading instruction is widely recognized as an important way for readers to extend and clarify their ideas. Empirical research on using word processors as a tool for writing development underscores the positive effects that computers can have on the writing process. Previous research on using word processors illustrates how computers can support mechanics and grammar as well as encourage revisions and editing. In his meta-analysis of 32 studies comparing groups with access to word processing with those using pen and paper, Bangert-Drowns (1993) concluded that the word-processing groups generally produced a higher quality of writing and longer documents. After reviewing the research on writing and computers, Kamil et al. (2000) strongly recommended that computers be implemented for word processing.

While the ease of revisions on word processors might be considered sufficient motivation for encouraging students to automatically revise their papers, at least two empirical studies (Daiute, 1986; Daiute & Kruideneir, 1985) did not find this to be the case. The authors found that prompts to

revise did yield higher levels of revisions and suggested that prompts to revise may be necessary. This finding underscores the significance of considering factors such as how word processors are introduced and implemented in the classroom. In what follows, we review practical implications of introducing computers for word processing into the curriculum and suggest how to support their use.

Practice

At least two key implications for successful implementation of word processors follow from the research. First, it appears that word processors can be implemented more effectively when introduced in a context of instruction (Bangert-Drowns, 1993). In contrast to the implementation of word processing as an independent or outside-the-classroom activity, the seamless integration of word-processing activities into a general program of reading and writing instruction will benefit students. Second, preliminary research suggests that students can utilize word processors more effectively when directive prompts and assistance for revisions are offered. More specifically, teachers can help their students utilize word processors more efficiently by offering specific writing instruction, prompts to revise, and directive guidance. The benefits of offering word processors for helping students to produce higher quality written work have garnered a considerable amount of empirical support. There is sufficient evidence to recommend that word processors be incorporated into a successful program of literacy instruction.

COMPUTERS TO SUPPORT COMPREHENSION

Research

Applying technology to facilitate reading comprehension may be a particularly apt use of the unique benefits of an electronic medium. One unique feature of electronic applications is that they have the potential to support comprehension by providing information and content (video, audio, hypertext) in ways that cannot be supported in conventional text. Offering information in a variety of media, such as with dynamic video or multimedia text, may have beneficial effects on comprehension. In fact, the dynamic nature of multimedia presentations has been found to have a significant impact on the retention and comprehension of information.

As an example, Sharp et al. (1995) found that the presentation of salient dynamic images to kindergarten children was more effective than the pre-

sentation of static images on measures of story comprehension and recall. The authors posited that the dynamic images might be effective for helping children visualize hard-to-imagine concepts and changes in spatial relationships. In a study of multimedia processing with adults, Mayer and Moreno (1998) found support for augmented comprehension with multimedia presentations where the verbal and visual information was presented together, rather than separately. An example of integrated verbal and visual support would be a dynamic animation with a concurrent audio narration. These types of coordinated presentations were found to be particularly useful for comprehension.

Practice

These studies highlight the importance of paying close attention to the content of the presentation, as well as looking at the nature of the presentation. While the findings are tentative, the studies suggest that dynamic images may be more beneficial than static images for helping children to visualize changing spatial relationships. In addition, the combined presentation of visual and verbal support appears to be particularly effective for comprehension. Multimedia applications that present the dynamic illustration of important concepts coordinated with the relevant audio narration could enhance the comprehension of spatial and complex information. These findings have important implications for the selection and use of effective multimedia literacy materials to support comprehension. Materials such as computer storybooks, software applications, and scientific videos should be evaluated to see how effectively they integrate verbal and visual information about difficult concepts to support comprehension.

COMPUTERS FOR BEGINNING READING INSTRUCTION

Research

Beginning readers, or students who are just beginning to learn to read, can benefit from computer-assisted instruction. Even young children who are not proficient with a keyboard or mouse can use computers with touch screens, where the computer screen is activated through touch. This feature allows children who are not yet able to read or write to simply touch various areas of the screen to interact with the computer. Another promising application of technology to benefit beginning readers has been for the direct instruction of reading skills. For example, Barker and Torgesen (1995) and Mioduser et al. (2000) found significant learning-outcome ben-

efits for teaching phonological awareness to at-risk students through the computer. Additionally, Reitsma (1988) found that independent reading practice with computer speech feedback was a useful tool for helping to improve beginning reading skills. The use of digitized speech to help beginning readers learn to read has also found some preliminary support in a small study undertaken by Davidson, Coles, Noyes, and Terrell (1991), which found significant gains for the computer group over the control condition on a standardized reading test.

Practice

The research findings for computer instruction to assist beginning readers highlight the benefits of using computer speech and specialized programs to help students gain proficiency in fundamental reading skills. Computer modifications such as touch screens and modified user-interfaces are available to allow even the youngest readers to utilize computer instruction. A few specific benefits of using computer instruction to teach beginning reading skills are that students can receive targeted practice on areas of weakness and can learn rote skills in engaging formats, such as interactive games to learn phonics. The opportunity to receive immediate corrective feedback is also a valuable tool for early readers who are learning early reading skills, such as sound and letter associations.

VOCABULARY INSTRUCTION

Research

Direct instruction of vocabulary words with computers has emerged as a viable way to learn definitions. Results of the National Reading Panel (2000) review of vocabulary-instruction studies underscore the importance of active engagement with words as one of the most salient factors in learning words. Accordingly, the application of multimedia and technological tools to instruct vocabulary appears to be one way to elicit task engagement and interaction. For example, Higgins and Cocks (1999) concluded that the use of animated cues for target vocabulary words significantly increased word learning for third graders. Correspondingly, Davidson, Elcock, and Noyes (1996) found that a computer that gave prerecorded speech prompts helped 5-to-7-year-old students on measures of sight vocabulary. With intermediate-grade students, Reinking and Rickman (1990) also found vocabulary gains with computer-assisted instruction of difficult words in texts. The authors noted an interesting finding that students who

received mandatory computerized vocabulary assistance outperformed the students who received voluntary assistance.

Practice

The research on vocabulary and computer instruction attests to the positive gains that computer-mediated instruction can have. By eliciting interaction through games, targeted practice, and animated illustrations, the computer can have a significant role in vocabulary instruction for students of all ages. In addition to the role of computers in the direct instruction of vocabulary in isolation, the computer can also provide vocabulary assistance to students as they read texts, as the Reinking and Rickman (1990) study illustrates. Certainly, the importance of active learning and of the direct instruction of difficult vocabulary words in text has been found helpful in traditional formats as well (National Reading Panel, 2000). However, studies of computer vocabulary instruction are important in illustrating how many of the same educational principles can apply to electronic formats, and how successful gains can be accomplished through the computer.

COMPUTER INSTRUCTION FOR SECOND-LANGUAGE LEARNERS

Research

One of the most promising applications of computers is to assist second-language learners. Several characteristics of computers make them particularly useful vehicles for supporting second-language instruction, including their ability to customize instruction, tirelessly repeat information, offer multimedia support (dynamic visuals, audio), and offer a number of expedient services (instant translations, fast electronic searches). Numerous studies have found technology to be a useful tool for helping nonnative English learners acquire fluency and reading proficiency in a second language.

Chun and Plass (1996) and Plass, Chun, Mayer, and Leutner (1998) found support for using integrated multimedia for second-language comprehension. More specifically, Plass and his colleagues underscored the importance of simultaneous visual and verbal support for facilitating second-language comprehension and found that advance organizers were also helpful. The availability of electronic dictionaries and glossaries has also been found to enhance comprehension in second-language learners. Knight (1994) and Leffa (1992) found that students who had access to elec-

tronic dictionaries and glossaries tended to learn more and read the passage longer than students under the comparable no-computer conditions.

Practice

The first implication for supporting second-language learners is the careful selection and integration of multimedia materials with literacy instruction. Research suggests that the combined presentation of audio and visual information can help illustrate and instruct words and concepts for second-language learners. Secondly, the provision of electronic tools such as electronic dictionaries for quickly referencing definitions and finding information electronically appears to be advantageous, especially for students with low verbal ability. Nonnative English learners have a variety of tools available to them, including electronic dictionaries, grammar assistance, instant translations, and tools for hearing the correct pronunciations of difficult words. The incorporation of these and other similar tools in a program of literacy instruction may be very beneficial to second-language learners.

AT-RISK STUDENTS

Research

Several studies have investigated the utility of using computers to help students at risk for learning disabilities or considered at risk because of socioeconomic disparities. On the whole, studies have found very encouraging results for both younger and older students. For example, Mioduser et al. (2000) found that preschoolers who were considered at high risk for learning disabilities benefited from computer instruction in early reading skills such as letter naming and word recognition. Computer instruction has also proven to be beneficial with older students. Weller, Carpenter, and Holmes (1998) found that low-achieving fifth graders with daily computer instruction had higher reading gains than those receiving traditional instruction. Vollands, Topping, and Evans (1999) found benefits over traditional classroom instruction from using a computerized self-assessment of reading comprehension on a sample of socioeconomically disadvantaged sixth graders.

Practice

At-risk readers may particularly benefit from the use of assistive technologies that can provide additional practice with literacy skills, assistance with definitions, multimedia illustrations, writing help, and computer reading of passages. Young readers have been found to benefit from practicing early reading skills through the computer, as well as from the multimedia representations of information that may be difficult for them to imagine on their own.

The hallmark of many of the recent technological reading tools is the ability to customize and individualize instruction for the needs of a specific learner. Altering the skill levels or readability, providing targeted practice in weaker areas, or presenting an individualized program of instruction based on a student's correct or incorrect responses are just a few of the ways that reading instruction can be matched to diverse learners. Finding the right match between technology-based tools and readers is largely a question of knowing what assistive tools are available, knowing the task demands, and most importantly, accurately assessing what type of assistance a reader needs to be successful on the task.

INSTRUCTIONAL CONSIDERATIONS FOR SUCCESSFUL IMPLEMENTATION

When technology-based reading instruction is introduced in the classroom, there are several important considerations for successful implementation. Young readers and readers without much prior computer reading experience may not be proficient with basic computer skills such as opening computer programs or files, searching for information, and word processing. In addition to the mastery of basic computer skills, there are additional challenges associated with learning multimedia information. A fundamental skill for processing multimedia information successfully is the ability to integrate visual and verbal information in a comprehensive way. More specifically, when information such as speech or text is presented with information such as diagrams, pictures, or video, an effective reader must be able to attend to the salient details of both and synthesize the information.

Prior research suggests that younger children, in particular, may not have strategies to help them learn important information from the combined presentation of text and visual information. As an example, Moore and Scevak (1997) studied Grade 5, 7, and 9 students reading science texts with accompanying visuals. The older students displayed a greater ability to link text and visual-aid information explicitly than younger students did. A

central finding from this study was that the explicit linking of text and diagrams and the ability to make referential connections are not common in younger children, especially when reading science texts.

Effectively reading with multimedia can present some unique challenges not faced in processing conventional text. For example, when reading a hypertext document, the reader is constantly faced with decisions about whether to pursue or skip a link to additional information, as well as metacognitive considerations, such as the timing of access to the links. When students do not pay attention to these considerations, confusion, lack of comprehension, and getting lost or off-topic can quickly result. Students need specific instruction for reading and extracting information from various types of documents, such as texts with hyperlinks or video. This type of processing is likely to require a diversity of strategies for integrating information of various types, as well as specific skills, such as navigating hyperlinks or searching for information. Moreover, simply presenting the multimedia information to children is not likely to be sufficient for the active and efficient processing of important details.

The Need for Directive Instruction

Children often need explicit directions to pay attention to visuals. As Kirby (1993) has noted, students may need instruction or prompting to deeply process visual and verbal information. Without directive guidance to attend to diagrams, charts, or illustrations, many readers are likely to ignore salient information contained in these forms of information. In order to be most effective, the directive guidance should be specific and detailed. A critical factor for success is that readers should be made aware of the specific goals and purpose of the activity. Rather than general instructions for students to "pay attention to the pictures," a more effective instructional prompt would include much more specific and directive information.

Directive types of instructions give the reader much more detail on the salient information they should attend to in the diagrams, as well as specific goals for interacting with the visual information. Subsequent dialogue that links the information gained from the visuals with the text information can enhance the comprehension of the text even further. The teacher might link the information gained from the visual inspection of diagrams to corresponding text information, for example through a comparative discussion of the illustrations and the text with explanation of the differences. By helping readers to recognize and attend to salient visual details and to integrate the information with text, the comprehension and recall can be measurably improved.

The Importance of Strategy Instruction for Multimedia Documents

Finally, preliminary research has also identified the role of strategy use in accounting for differential multimedia reading outcomes. Some specific strategies that have been correlated with more successful outcomes include being able to identify important hyperlinks and read them longer (Gillingham, 1993) and utilizing a variety of learning strategies (Davidson-Shivers, Rasmussen, & Bratton-Jeffery, 1997). Careful choice of multimedia documents that have a few well-chosen and well-placed links to relevant information coupled with specific instruction in navigation, strategic considerations, and search skills may be particularly helpful to novice readers.

FUTURE USES OF TECHNOLOGY

Recently, developments in adaptive computer technologies have brought the prospect of delivering highly interactive and individualized literacy instruction to a new level of realization. Advances in technology afford new opportunities and prospects for teaching literacy skills, such as offering individualized help, pronunciations of difficult words, and writing assistance. These advances provide a window into potential applications of technology to support literacy instruction dynamically in the very near future.

Speech Technology

Recent developments in speech technology that have implications for improving reading instruction in the near future include significant improvements in speech synthesizers and speech-recognition technology. Speech synthesizers are computer-generated voices that can assist readers by pronouncing words. Advances in speech-synthesizer research are creating increasingly natural-sounding speech that realistically mimics the human voice. Prior research has found beneficial effects of utilizing speech synthesizers in conjunction with word-processing programs on outcomes such as identifying writing errors (e.g., Raskind & Higgins, 1995).

Speech-recognition technology, or the ability of computer devices to recognize and interpret human speech, is also becoming increasingly accurate. Speech-recognition technology allows students to convey information to the computer through speech, which has special implications for prereaders and children who have difficulties with writing. An added advan-

tage of speech recognition is that it is not dependent on spelling or typing ability, which may be particularly beneficial for special populations.

Artificial Intelligence and Learning Agents

Technological advances in the field of artificial intelligence have endowed adaptive-learning guides and agents with new possibilities of assisting learners and eliciting interaction. Adaptive-learning guides and agents are electronic devices that offer help and information to readers of electronic and multimedia text. Specific kinds of assistance that can be offered to readers include navigational help, relevant contextual information, and directing the reader's attention to salient information. Despite the interest and seemingly bright outlook for adaptive-learning guides and agents, there has been surprisingly little research on the efficacy of using such agents for literacy instruction. Accordingly, the application of adaptive-learning-guide technology to individually assist readers with literacy skills such as reading comprehension and strategy use is an area in need of further exploration.

LIMITATIONS OF USING TECHNOLOGY

Despite the positive outcomes reported with the use of various technologies for literacy tasks, it is important to note that wide variations exist in the implementation of the studies. Compared to the diverse array of computer tools available for literacy tasks, the empirical research on the conditions for successful learning outcomes is relatively sparse. In particular, very little information is available to inform general guidelines or principles for the successful implementation of technology to support literacy instruction. While various studies have reported positive effects of using computers with literacy activities, other studies have found neutral or even detrimental outcomes. For example, there are data to support the notion that reading text from computer screens can be less efficient than from paper (e.g., Kamil & Lane, 1998) and that certain readers, such as students with low prior knowledge, tend to perform worse when reading documents with many user-controlled hyperlink options than when reading documents with more limited control (Shin, Schallert, & Savenye, 1994). Accordingly, it is not too surprising that given a choice, readers often express a preference for reading documents in conventional text over electronic text (Kim & Kamil, 1999).

As a whole, our current knowledge on the effective design and implementation of technology and reading instruction for children is in a rudi-

mentary state. With few exceptions, the research on multimedia processing has conventionally been carried out with adults, making it difficult to generalize findings to children. To advance theory in this area, more focused experiments that explore the underlying cognitive and affective processes involved in reading multimedia text are clearly needed. What is currently missing from the literature is an interdisciplinary perspective that combines the latest advances in technology and computer science with educational theory on reading, motivational, and cognitive processes. By exploring both the prospects and limitations of applying technology in the context of reading instruction, educators can continue to devise innovative and successful ways to balance traditional and more contemporary approaches to literacy instruction in the classroom.

CONCLUSION AND POLICY IMPLICATIONS

The review of research into the application of technology for reading instruction underscores some of the important instructional issues and considerations involved in successful outcomes. First, some studies found that technology can be used as a tool to facilitate reading comprehension. In particular, the dynamic presentation of difficult concepts and the use of combined video and audio information to present information was found to have positive effects on comprehension. Second, we found that technology can be an effective tool for supporting a wide range of literacy tasks, from word processing to vocabulary instruction. Third, technology can effectively provide additional support for special populations, including readers with learning difficulties, nonnative English learners, and young children. Exciting prospects for the future include advances in areas such as artificial intelligence and adaptive technologies that have the potential to customize instruction and assistance to the individual to unparalleled degrees.

Finally, we posit that the effective use of technology for reading should include provisions for the curricular integration of and support for computers in the classroom. More specifically, classroom literacy instruction should include the instruction in the specific skills and strategies that are necessary for success with computer activities. Given the unique demands of processing information in an electronic medium, most readers will benefit from directive guidance and instruction on how to use the electronic aids. In conclusion, we would like to highlight a few important policy considerations for the successful implementation of technology for reading instruction.

Access to Technology

Unquestionably, a major consideration for the viability of technology-based reading instruction hinges on issues of providing access to the technology for all students. As proficiency with working with technology is refined over time and experience, access to technology will be critical for developing fundamental skills and providing exposure to processing various modes of information. With the influx of information that is available through multimedia information sources such as the Internet and online classroom instruction, the need to interact and gain proficiency with computers is becoming virtually unavoidable. For students who are not likely to have computers at home, providing access to technology through schools, after-school programs, community technology centers, and other venues may be an integral part of providing opportunities to gain experience and proficiency with technology.

Multimedia Instruction in the Classroom

It is clear that providing access to technology is simply not enough. Processing multimedia information and learning with computers entail special considerations for success. Since such learning is far from being an intuitive or automatic process, the research we have reviewed suggests, readers are likely to need instruction and prompting to attend to salient information, to use assistive tools, and to be able to process multimedia information effectively. Specific instruction may be essential for efficient processing when readers do not have a great deal of experience interacting with technology. Instruction in basic areas such as strategies for reading hypertext documents, searching for electronic information, and utilizing aids such as spelling and grammar checkers may be especially beneficial for readers who are less familiar with technology.

Cost-Effectiveness

Traditionally, one hope was that computers would be able to assume some of the time-intensive instruction that teachers delivered for reading. In addition, it was also hoped that computers would allow for individualized instruction. These are issues that are not often addressed in current research. However, in the 1980s several studies addressed them, demonstrating that there were effects, often fairly substantial (Niemiec, 1987; Niemiec & Walberg, 1985), on achievement when instruction was delivered by computers.

Coupled with the issue of how effective computers can be in teaching reading is the more general question of whether or not computers are cost-effective for teaching reading. This was an intense area of concern in the late 1980s (Levin, Glass, & Meister, 1987; Levin & Meister, 1986; Niemiec & Walberg, 1986). These studies showed that indeed computers were more cost-effective than many other interventions, including lengthening the school day or providing additional teachers.

Even though such analyses are rarely done in the current research climate, there can be some speculation about whether or not computers are still cost-effective. Since computers have become far more powerful, much more capable, and above all else, very much cheaper, their cost-effectiveness should be even greater.

However, since we also see the absolute necessity of teaching students about computers, the issue of cost-effectiveness is not as decisive as it seemed to be in the 1980s. Rather, we believe that it is imperative that students should learn to use computers in order to be prepared for later life. It is a bonus that computers probably provide a strong additional gain in reading achievement.

Curricular Integration

Our review of research has shown that many aspects of reading instruction can be enhanced with technology. Whether helping younger children practice reading skills, providing assistance with grammar and spelling, or furnishing a medium for presentations and graphics, technology has a wide range of applications in a reading-instruction curriculum. By consistently integrating technology in reading instruction through projects and activities, schools can help readers can gain proficiency with using technology as a tool to assist them in a variety of ways. We strongly recommend the curricular integration of computer activities to support literacy instruction in the classroom.

Preparation for Life

Importantly, the reading activities that incorporate technology should entail careful attention to providing instructional support for helping readers to successfully use the tools. This support may include specific instruction of skills, such as lessons on how to perform Internet searches, and practical considerations, such as pairing more proficient students with those students who are not familiar with technology. Providing students with the opportunity to acquire proficiency with reading and writing on

the computer has important implications for preparing them for future academic and professional demands. Access to opportunities to work with technology, coupled with specific instruction, can help make inroads toward bridging the digital divide in an economy where technological skills are becoming increasingly necessary for success.

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CHAPTER 3

HOW CAN CHILDREN BE TAUGHT TO COMPREHEND TEXT BETTER?

Michael Pressley and Katherine Hilden

"Keep your eye on the prize!" Everyone who knows anything about motivation knows this good advisement. Having goals does much to motivate people, including teachers. In this case, the prize is reading with high comprehension and skillful interpretation. Thus, we are heartened that the goal of many reading-education professionals is to develop good readers, with good reading having as its hallmark that the reader can comprehend and interpret what is being read, often at several different levels.

When we recently reread C. S. Lewis's *The Magician's Nephew,* we understood it as a fairy tale about children passing through to a magical land, one filled with adventure. We also interpreted it as a creation story, one of many in literature. Aslan the lion is the creator, at one point commanding that an apple be retrieved from a distant garden. Many elements of the Adam and Eve story were obvious to us in Lewis's book, for we are thoroughly familiar with the Old Testament Genesis story. As we read about how Jadis, the antagonist personifying evil in the story, arrives in the newly created Narnia, we were reminded not only of Genesis but also of other stories about how evil originally entered the world. We understood *The Magician's Nephew* well, at a level permitting a discussion with young elementary teachers who were going to teach the book, a discussion covering the many layers of meaning in the text. Our prior knowledge had served us well in understanding and interpreting the book.

As we read *The Magician's Nephew*, we were very active readers, studying the pictures carefully, for example, in order to get the most out of the text. The illustrations and ideas in the text combined in our own imaginations to produce mental images of much of the story. Often, as we read, we checked back in the text when a point seemed confusing, knowing that to stay confused at this moment would only lead to greater confusion later! While reading about the appearance of the Narnian landscape, we went back and reviewed the book as a creation story. After concluding the book, we reviewed in our minds all that had been created in Narnia in the course of the book. We related what was revealed about Narnia in *The Magician's Nephew* to what we knew about Narnia from reading several of the sequels to *The Magician's Nephew*, reflecting on how the book just completed set the stage for so much that followed in the other books. Our mental review resulted in a representation of the story that allows us to discuss *The Magician's Nephew* with others. This representation is also helpful for reading books by authors who interacted with Lewis, such as Tolkien. Our use of reading strategies for understanding and remembering *The Magician's Nephew* has paid off.

Excellent readers understand what they read, largely because they have powerful prior knowledge that they can relate to a new text. They also use active strategies to ferret out the meaning of a text being read. It is heartening that many reading educators see it as their goal to develop active readers who have rich prior knowledge, knowledge that they can learn to use to understand what they read.

That said, others feel that developing active readers who use their extensive prior knowledge and comprehension strategies to understand text is too distant a goal. These naysayers believe that the primary goal should be teaching young children how to decode words. Therefore, the process of turning children into active readers should occur only after they have learned to sound out words. We will disagree with this perspective emphatically in this chapter, arguing that even during the primary years, a case can be made for educating children to be active readers, with learning to recognize words only part of the mix of competencies that need to be developed in young readers.

Thus, the arguments made in this chapter are somewhat countercultural, certainly in the context of many American discussions of beginning reading education. Many contemporary policymakers believe that learning to decode should be the prize in the minds' eyes of those who teach children to read. According to this perspective, learning to recognize words is a gatekeeping competency that, once mastered, permits the rest of reading development to proceed smoothly. That is, once children learn to decode, everything else more or less follows. Learning to decode is the first and biggest step to becoming an excellent reader.

Although we recognize that learning to decode is extremely important, we keep in mind that there is a very great distance between learning to recognize words and being an excellent reader. Of course, that distance is on the minds of the policymakers who believe in taking one step at a time, with the first step, learning to decode, a giant one, from their perspective. Learning the first steps leads to eventual fluent walking, followed by running and all the other complicated coordinations that mature legs can perform (e.g., dancing, pedaling). Another way to think of the situation, however, is that reading is not just analogous to the functioning of the legs but rather is analogous to the development of the whole child. As locomotion is developing, a child learns not only how to walk and run, but also how to coordinate the movement of the head, arms, and hands. In fact, reading seems more like this to us. The act of reading involves the simultaneous development of word recognition, comprehension, and interpretational skills that work in concert with one another. When we reflect on the nature of excellent reading as such a whole act, it is clear that there is much that can be taught to young readers that should contribute to their becoming excellent readers. A main message of this paper is that, in fact, the scientific community has made a lot of progress in identifying instructional practices that do help young readers become excellent readers, comprehenders, and interpreters. And such instruction can profitably start very young. Thus, we repeat, "Keep your eye on the prize." It helps to know what that prize looks like, to be aware of the complex nature of skilled comprehension.

SKILLED COMPREHENSION

Researchers interested in skilled reading have often relied on a particular approach to the study of reading. They have asked readers to think aloud as they work through a text. Pressley and Afflerbach (1995) reviewed all such studies of reading to generate a catalog of the processes used by skilled readers. Although skilled reading is very active, it is also very coherent. One obvious coherence is that most reading occurs generally from the beginning to the end of the text. That is, the reader begins with the first word of the reading and continues reading until the last word. That said, excellent readers do more than simply read every word of the text sequentially; they also construct meaning from a text before, during, and after their beginning-to-end reading of it.

Before Reading

Good readers know why they are reading a text before they read it, with their knowledge of that goal largely guiding their reading. For example, reading a novel for leisure is done less carefully than reading a novel to prepare for an English lit seminar discussion tomorrow. Often, before a reader reads, she or he skims the text, noting characteristics of the text (e.g., length, what seem to be important parts). The reader may decide only to read certain relevant parts of the text or decide that some parts should be read in detail and others can be read less intensely.

Sometimes, the reader decides not to read the text at all after a prereading skim reveals that the text is not relevant to the current reading goal. Other times, skimming in advance of reading results in a general idea about what the reading might be about, with this hypothesis kept in mind as the reader starts to read.

During Reading

Although reading generally is done from beginning to end, there can be much variation in this. Sometimes skilled readers read every word of the text, and other times, they skip part of the text. All or some of the text may be skimmed. Readers can decide the text is easy and hence rely on comprehension processes that are automatic. When readers decide the text is difficult, they may reread or even repeat aloud some parts of text to understand and remember it, pause to reflect on parts of text, paraphrase what was read, or take notes. Readers might look for patterns in a difficult text. Throughout reading, skilled readers anticipate what might be revealed in upcoming text, often comparing what they thought would be in the text with what is actually written. As new information is encountered, they can reflect on it on the basis of their expectations and ideas presented earlier in the reading. Sometimes the reason for reading a text changes as a function of what is encountered during the reading. Thus, a student reading a piece in preparation for writing a paper may decide the article does not contain information relevant to the paper but should be read, since it is helpful in preparing for the upcoming exam in the course, covering ideas that are potentially relevant to questions that will be posed on the exam.

Identifying important information in text

While they read, good readers are looking out for information especially pertinent to their reading goals, continually deciding whether information is relevant. They are attentive to information in text that they did not know previously. They are aware of important new vocabulary, words that should

be known by someone with their reading goal (e.g., a student preparing to write a paper on *The Magician's Nephew* might make a mental note of the specific meaning of the word "wardrobe" encountered in a review of the book, since understanding that Lewis is referring to a piece of furniture is a key to comprehending the title of the book that follows *The Magician's Nephew* in the *Chronicles of Narnia* series). In short, good readers often seek to identify key points in texts and try to remember them.

Conscious inference making

Excellent readers consciously try to go beyond the information explicitly stated in text, largely relying on their prior knowledge to do so. For example, they fill in details (e.g., after reading, "He dropped the gun from the bridge," inferring it hit the water and sank), sometimes using prior knowledge to construct explanations (e.g., thinking the man dropped the gun to hide evidence). Good readers will often make inferences about the psychological state of people they read about (e.g., inferring that the man dropping the gun must have been in a panic). Additionally, readers sometimes make inferences about the author.

Integrating different parts of text

Good comprehenders try to get the big picture as they proceed through text, explicitly attempting to summarize along the way and to understand the different parts of the text in relation to one another (e.g., how what was learned about Uncle Andrew in the early part of *The Magician's Nephew* explains his behaviors later in the story). Good readers are aware of the key parts of stories—key settings and character portrayals, the problems encountered by the characters in the story, how they attempt to solve their problems, and eventual resolutions. Competent readers hold the key ideas of the text in mind as they continue reading. If it becomes apparent that key ideas are not understood, good readers will look back and reread.

Interpreting

Good readers interpret as they read. They paraphrase, construct visual images representing events described in text, and construct many interpretive conclusions (e.g., the story reflects the customs prevalent when the book was written, the writer intended to persuade readers that ecology is important, this is a racist book). Good readers sometimes construct alternative interpretations of what they read. Readers might interpret *The Magician's Nephew* as a fantasy story meant to entertain. Alternatively, the book might be read as a moral story, written to heighten readers' awareness of how they can unknowingly introduce evil into the world.

Monitoring

Throughout reading, good readers are monitoring, aware of characteristics of the text, such as the level of difficulty as well as the writing styles and mechanisms used by the author. Skilled readers are aware of how text relates to their own prior knowledge (e.g., text may be consistent with their own opinions, be filled with new information, contain ideas that clash with fervent beliefs, or be saturated with vocabulary never encountered before). Readers are aware of their state of understanding and appreciation as they read and of whether their reading of the text is fulfilling reading goals. This awareness guides their reading (e.g., motivating slower reading or rereading when they feel they do not understand a section of text and when a section is perceived as especially beautiful or meaningful). Also, readers may skip sections of text containing information that is already known. Readers are very aware of problems they are having as they read, either ones due to the text (e.g., unfamiliar vocabulary, poor writing) or to themselves (e.g., waning attention, reading too slowly, reading too quickly), again, with such awareness motivating reader actions.

After Reading

Much monitoring also occurs once reading is completed. Good readers are aware of whether they have gotten out of text what they wanted to get out of it, and if they have not, they can decide to process the text additionally. Good readers sometimes decide to reread all or part of a text after concluding a first reading. Some parts of the text may even be studied to assure understanding or memory of it. Brief notes or even a written summary can be helpful. Good readers often will reflect on what they have read, perhaps asking questions of the text and attempting to answer those questions on the basis of their sense of the text. This activity can be in anticipation of future use of a text (e.g., talking about it in a class).

Evaluating

Evaluating text is not just a cognitive activity but an affective one as well. Readers form opinions and emotions about ideas that they are comprehending and evaluating in a text. Good readers evaluate a text and its ideas extensively as they read. They are aware of whether they accept or reject positions expressed in the text. They evaluate the authors' conclusions using reasoning processes and evidence offered by the author. Excellent comprehenders are also very aware of the quality of writing, whether it is good or bad, appealing or standoffish, contemporary or traditional, or in

standard or regional dialect. The sum of these many evaluations sometimes is an enthusiastic, positive one ("I loved this book") or an emphatically negative one ("What a waste of a tree and my time").

Summary

We know that learning to recognize words does not translate to the type of reading described in this section. We have observed countless children who read "without expression." As they read aloud, these children struggle to sound out individual words, doing so slowly. The pernicious nature of this problem is revealed when teachers question these children about the text they are reading. If such readers can answer literal questions, they often have great difficulty answering questions that require making inferences. They simply do not understand what they have read, and they have engaged in little or no interpretation.

At its most basic level, excellent readers use strategies as they read, with one huge strategy being to relate ideas encountered in text to their prior knowledge. Even more positively, analyses of the verbal protocols of reading have made clear that strategic processing boils down to relatively few strategies: predicting what might be in text from prior knowledge, self-questioning, constructing mental images representing ideas in text, relating ideas in text to prior knowledge, seeking clarification when confused, summarizing, and making cognitive and affective interpretations. That expert reading can be reduced to a set of such activities has done much to motivate instruction intended to increase children's comprehension skills. There is substantial theoretical and empirical support for teaching students comprehension strategies and developing rich prior knowledge that can be related to ideas in text when a reader encounters them. That is, the prize in comprehension instruction is comprehension strategies and highly meaningful world knowledge.

COMPREHENSION INSTRUCTION

That so many teachers do have vivid memories of students reading aloud as just described in the last section makes it obvious that students need to be taught how to comprehend text, how to get beyond word-by-word reading. That it is obvious definitely does not mean that comprehension instruction is getting done. In fact, whenever researchers have observed classrooms to identify the comprehension teaching that is occurring, they have concluded that little to none does occur. Teachers usually assess a student's comprehension by asking literal questions about a text they have just read.

Unfortunately, teachers do not teach students how to process texts so as to improve deeper understanding and promote more compelling interpretations. More positively, much is now known about how to increase student comprehension skills (see, for example, Pressley, 2000), with a consistent message in this literature that even students in the early elementary years can learn much that will make them better comprehenders.

Individual Comprehension Strategies Instruction

Cognitive psychologists have done much to provide detailed information about how texts can be appropriately processed. Much of that work involved studies of individual text-processing strategies. Basically, a researcher would hypothesize that reading comprehension would be improved if readers would just do more of X (e.g., construct mental images or ask themselves questions and attempt to answer them). To test such hypotheses, instructional studies would be carried out, with participants in one condition reading text while instructed to do X and control participants reading as usual. Then some measure of comprehension would be taken to evaluate the strategy (e.g., answering short-answer questions about what was presented in text).

Many of these studies reflected cognitive psychologists' interest in the types of cognitive representations people construct as they read and listen to text. And the various types of representational theories that resulted from these studies have inspired research on children's use of comprehension strategies:

1. Some researchers emphasized that readers often construct mental images of what has been described in text. This insight was complemented by work establishing that children do not form such images by themselves. However, they can be taught to construct such images, with improved memory.
2. Other researchers preferred to think of the knowledge as schematic, with people storing complex packages of relationships in their memories. This translates to the strategy that if children represent what they know schematically, then they should be able to use such schematic knowledge to understand text. For example, after hearing a story about a ship's christening, children understand the elements of a christening and how they relate to one another. Children can then use this christening schema to comprehend, interpret, and make predictions about another story involving a ship christening.
3. Still other cognitive psychologists emphasized that readers process all of the small ideas and details in a text (words and phrases), called

micropropositions. These are then integrated into higher order relationships, or macropropositions. Although macropropositions are constructed by processing individual propositions, readers never remember all of these details. Rather, readers remember the gist of the story. Thus, a macropropositional summary of Dickens's *A Christmas Carol* is that "It is about one man's transformation from a Scrooge to a generous soul through confronting his past, present, and future." As a result of this research, many studies of summarizations were conducted, with consistent findings that teaching children to summarize as they read improved memory and comprehension of text.

4. Depth-of-processing conceptions emphasized that people could think about material from alternative perspectives, some more meaningful than others. Asking questions about the text and then trying to answer them is one way to stimulate deeper thinking (Pressley et al., 1992). When readers questioned as they read and generated answers, their representations became more elaborate. Similarly, teaching students to generate questions as they read also improved comprehension.
5. Good readers, it has been found, encode stories with respect to key elements: setting, characters, problems they encounter, attempted resolutions, and ultimate solutions. These key elements are a story's grammar. Young readers who are taught to attend to these key elements can improve their comprehension and memory.

In summary, child readers are able to learn how to represent the ideas presented in a text in a variety of ways by using strategies, with the representational processing stimulated by instruction of such strategies improving children's understanding of text.

Multiple Strategies Instruction

Although the improvements in comprehension were impressive in the studies of individual strategies, there were several inherent problems with simply instructing children to carry out individual strategies. First of all, teaching children a strategy in no way guaranteed they would use it, with even strategy maintenance (i.e., continuing to use the strategy with texts and training materials and in situations similar to those encountered during training) proving elusive, and strategy transfer (i.e., use of a strategy with new types of texts and in new situations) downright rare. Cognitive psychologists hypothesized that readers not only had to know a strategy, but they also required accompanying metacognition (i.e., knowledge about

how to regulate and monitor the cognitive skills taught), for example, knowing when and where to use strategies. When this is accomplished, maintenance and transfer strategies increase (Pressley, Borkowski, & O'Sullivan, 1984, 1985). Cognitive strategies instruction needed metacognitive embellishment, including information about when strategies were valuable.

Something that was apparent from the verbal protocols, however, as well as from other analyses of comprehension (e.g., Markman, 1979), was that good readers were aware of their comprehension as they read, and especially aware when they were not comprehending. Such awareness motivated strategy use, particularly strategies to fix up comprehension when it was going awry (e.g., rereading parts of text that the reader perceived as miscomprehended, especially if the reader was aware that the section of text was probably important to the meaning of the text being read). This work heightened awareness that readers needed to be taught more than strategies for how to represent ideas in text. They also needed to learn to monitor their comprehension and seek clarification when text was not clear, when it seemed that comprehension was incomplete or flawed.

The studies of single strategies clashed with the results from the think-aloud studies of reading in another important way. It was salient in the verbal protocols that good readers did not use individual strategies but rather coordinated and articulated a number of strategies while reading text. Strategies instruction to encourage reading like expert reading needed to encourage the coordinated use of several strategies.

Finally, the work on individual strategies did not pay attention to the fact that when children acquire a new strategy, they need a lot of practice to master it. Many simple skills require a good deal of practice before people get good at them. Really effective strategies instruction almost certainly should include extensive practice applying strategies to new situations. For example, acquisition of transfer strategies almost certainly depends on practice, for during practice, learners have the opportunity to construct understandings about how and when the strategies they know can be stretched and adapted to new tasks and situations (Pressley, Harris, & Marks, 1992).

As cognitive psychologists were beginning to recognize that there was more to developing comprehension than teaching single strategies, they also discovered that they were not the first to attempt to improve student comprehension through strategies instruction. Before the cognitive psychologists came on the scene, the study-skills movement was prominently influential in reading education, with advocates of study skills recommending a number of approaches that involved the teaching of multiple strategies. The best known of these was SQ3R. Readers were encouraged to *survey* a text before reading it, noting titles, headers, and pictures, with survey being the *S* in SQ3R. Then, based on their survey, they ask themselves

questions about the text, accounting for the *Q* in the SQ3R abbreviation. Reading followed, with the reader encouraged to recite the text back and then review it further (i.e., the three *R*s were *reading*, *reciting*, and *reviewing*).

This approach improved memory and comprehension slightly (Forrest-Pressley & Gilles, 1983). Unfortunately, readers were taught to use the survey, question, read, recite, and review tactics in a rigid fashion, rather than taught to use these processes flexibly, as good readers do. Therefore, the tactics did not greatly improve understanding and memory of text. In the verbal protocols of reading discussed earlier, good readers do survey, question, read, recite, and review. However, readers do not necessarily use these strategies in that order and certainly not every time they read. Moreover, there was no metacognitive embellishment in SQ3R instruction, not much information about where and when the approach might work best. In part, this was because its advocates did see it as a general strategy, one that could be used with most texts. Both more positively and more negatively, SQ3R instruction included a lot of practice, so that readers could become thoroughly familiar with applying the approach. As someone who experienced SQ3R training, the first author can also report that such practice convinced him at least not to bother to use the approach when reading, for he monitored that he was not getting much out of the massive effort the approach required.

The first multiple strategies instructional approach to receive extensive attention from cognitive psychologists was reciprocal teaching, as detailed by Palincsar and Brown (1984). Palincsar and Brown were influenced by the study-skills literature. They acknowledged that reciprocal teaching had much in common with a study-skills method known as ReQuest. Reciprocal teaching, however, much more than the study-skills approach, emphasized student self-regulated use of text-comprehension strategies, with the package focusing on four strategies studied by cognitive psychologists in years previous to reciprocal teaching. Students were taught to make predictions before reading, ask questions about ideas in the text, seek clarifications when confused, and summarize the ideas encountered in the text. Students worked in small groups. After an adult teacher introduced the strategies by explaining and modeling them, individual students in the small group took turns leading the group in the application of the strategies to texts. Practice continued over a few weeks to permit students to become fluent with the strategies and their coordinated use. Although the effects of reciprocal teaching were not always large, in general, the approach improved student comprehension (Rosenshine & Meister, 1994).

Reciprocal teaching has not emerged as the technique of choice with respect to comprehension-strategies instruction, however. First, it focused on only four comprehension strategies, when, in fact, at least a few more are justified. More importantly, when educators began developing multiple

comprehension-strategies instruction, they did not base it on reciprocal teaching, even when they used this program as a starting point (Marks & Pressley, 1993). Well-informed educators begin strategies instruction with teacher explanations and modeling.

Rather than rapidly turning instruction over to student leaders, however, teachers continue to be involved, encouraging and prompting students to apply the strategies taught. Additional explanations and teacher modeling occur when teachers sense a need for it, with teacher-guided practice of strategies occurring over semesters and years of instruction, rather than over the course of single month as occurred in Palincsar and Brown (1984). Common to this approach are small-group reading sessions, with students reading aloud and, as they do so, deciding which comprehension strategies to apply, reporting aloud to group mates their choices and how they are using them (Pressley, El-Dinary, Stein, Marks, & Brown, 1992). Practice applying strategies in small formal groups eventually gives way to more informal practice, for example, when students read together as pairs, autonomously relating to one another what they are doing to understand the text as they read.

Although the repertoire of comprehension strategies varies from classroom to classroom, there are usually more than the four strategies favored by Palincsar and Brown. Strategies often included in student repertoires are making predictions from prior knowledge in advance of reading the text, generating questions while reading, constructing images, relating ideas in text to prior knowledge, monitoring whether the text makes sense (and seeking clarification when it does not), and summarizing.

In applying comprehension strategies, readers are also interpreting texts. Thus, the images created by readers are selective and often very personal. No two readers in a group ever describe quite the same images in text read. Similarly, summaries reflect what individual readers believe is important in text. Of course, because readers' prior knowledge differs dramatically, reader associations to text are often very personal interpretations. In part because of the interpretive nature of comprehension strategies as they are applied by readers, educator teaching of multiple comprehension strategies has come to be known as transactional strategies instruction. This approach emphasizes that applying comprehension strategies results in unique interpretive transactions between readers with deeply personal histories and perspectives and texts that can be interpreted in many different ways, depending on the reader's prior knowledge and beliefs. Encouraging students to use comprehension strategies is in many ways encouraging them to respond to texts as English teachers believe readers should respond to texts (Rosenblatt, 1978).

Transactional strategies instruction has received much positive attention, including from the National Reading Panel (2000), because it has

resulted in dramatic improvements in understanding, with these improvements demonstrated in well-controlled studies (Anderson, 1992; Brown, Pressley, Van Meter, & Schuder, 1996; Collins, 1991). This track record is the backbone of support for recommending that K–12 teachers teach their students a small repertoire of comprehension strategies. Strategy instruction begins with direct explanation and modeling, followed by teacher-supported practice as students read real literature, with the ultimate goal that students will internalize the strategies taught and use them in a self-regulated fashion. The development of such competence through instruction occurs over semesters and years, not days and weeks.

A point of emphasis is that in the Brown et al. (1996) study, the participants were previously low-achieving Grade 2 students. It is possible to teach primary-level students to use strategies like prediction, questioning, constructing images, seeking clarification, and summarization with a cascade of positive effects on reading, as were documented in that study.

Teaching Vocabulary

Excellent readers use comprehension strategies, but their strategy use largely depends on other knowledge they possess. Thus, readers cannot relate ideas in text to prior knowledge unless the prior knowledge is already in place.

One important form of knowledge is understanding of individual vocabulary items. Logically, it is difficult to imagine how readers could understand sentences or paragraphs if they did not know the meanings of the individual words in the sentences and paragraphs. The instructional implication is that developing student knowledge by teaching enriching vocabulary should increase reading comprehension. In fact, there is a variety of evidence supportive of this position (e.g., Beck & McKeown, 1991), including reasonably well-controlled instructional experiments in which some students were given vocabulary-enrichment instruction and others were not.

Developing Reader Sensitivity to Context Clues

Although teaching vocabulary explicitly increases comprehension, most vocabulary is not learned through direct instruction. Most meanings are learned through naturalistic encounter with vocabulary in context (Sternberg, 1987). Hence, it makes sense to teach students to attend to context clues about meaning when they encounter new vocabulary words. Such attention to context clues is important for another reason as well. When good readers read a new word (i.e., not one previously encountered in

print, but one that is in their listening and speaking vocabularies), context clues provide information about whether the new word was read correctly. Thus, a student might encounter this sentence: "The little boy climbed the steps on the bus and found his way to a seat that was next to a door marked 'Emergency Exit.'" A young reader, however, might read the sentence as, "The little boy climbed the steps on the bus and found his way to a seat that was next to a door marked 'Elementary Exit,'" substituting for "emergency" the only long word beginning with an *e* that the child knew. The context clues provide powerful hints that this is not the correct reading, however, for the reader who has experienced "emergency-door" drills on a school bus, or heard the driver's warning not to touch the "emergency door." These context clues can prompt more careful examination of the problematic word.

In short, young readers should be taught to pay attention to context clues when they encounter new words, with this heightening sensitivity to the correctness of reading of words but also to the meaning of what is being read. If the whole point of the story later depends on the reader knowing the child who entered the bus was near the emergency door, the point may be lost on the reader if she or he persists in thinking the child was sitting near the elementary door!

Developing Important Cultural Knowledge

In recent years, E. D. Hirsch has argued as emphatically as anyone that it is important to develop in students the cultural knowledge and understandings that literate people possess. Consistent with now classical positions in the psychology of reading, Hirsch views deep and extensive knowledge to be critical in reading comprehension. Readers consistently understand ideas encountered in text in terms of what they know already (Anderson & Pearson, 1984). With respect to reading education, this translates into encouraging students to read excellent literature and information books, books that contain characters and ideas that are well understood by educated people.

There is no doubt that extensive reading results in extensive knowledge (Stanovich & Cunningham, 1993), with one important indicator being that those who read extensively also have extensive vocabularies (Pressley, 2000). That said, we can hope for more work in the future establishing more direct linkages between extensive reading that builds cultural knowledge and subsequent improvements in reading comprehension. More positively, the Hirsch cultural-knowledge approach, when implemented in real schools, boosts elementary language-arts achievement (Datnow, Borman, & Stringfield, 2000).

Developing Word Recognition Skills

Earlier in this chapter we warned against overemphasizing the development of word-recognition skills. We would make the case that development of comprehension competence requires more than reading individual words. It makes good sense to encourage in young children the development of comprehension strategies used by good readers and of background knowledge that literate people possess. That said, developing skilled word recognition is very important if reading comprehension is to be high.

Reading the words of a text and understanding the text all take place in short-term memory, the part of our mind that is our consciousness. The hallmark characteristic of that consciousness is that it can only do so much at one time and is quite limited in how much it can do in any given moment. For adult readers encountering the phrase, "The cat in the hat," it is no problem to quickly read the phrase and call to mind Dr. Seuss's classic image. The process is automatic. But consider a 5-year-old who is just learning to read by sounding out words, and make it a good-case scenario: The child has had the Seuss story read to her a number of times and knows the pictures in the story very well. Even so, the child might invest considerable effort to sound out the individual words that have not yet been learned to the point of being sight words. Even if the child laboriously succeeds in making each sound in *cat*, *in*, and *hat*, the effort to sound out the words might totally consume consciousness, and in doing so, leave little capacity to understand what was read. The child might read the phrase and completely fail to understand it, not recognizing it as a phrase from a familiar book, not getting in mind the familiar image immortalized on the cover of what is a favorite book for the child. There is only so much consciousness, with word recognition and comprehension processes competing for it. To the extent that word recognition is laborious, comprehension suffers (LaBerge & Samuels, 1974).

The instructional implication is that developing word-recognition skills is critical to the development of comprehension abilities. Such word-recognition abilities have to be developed to the point, however, that students are able not only to sound out words, for sounding out of words requires considerable conscious effort. Rather, the skills must be developed to the point that students are also able to recognize words automatically, for such automatic recognition is fluent and effortless, leaving sufficient consciousness available so that the words can be understood as can the larger meanings of phrases, sentences, and paragraphs (Tan & Nicholson, 1997).

Summary

The prize in elementary reading instruction is to develop readers who can understand what they read, readers who are intelligent comprehenders and interpreters of text. Comprehension competence can be developed through instruction, with a variety of types of instruction contributing to the long-term development of comprehension skills.

Systematic word-recognition instruction makes sense as a first step, although the goal has to be to get young readers to recognition of words automatically (i.e., to sight-word recognition). Automatic word-recognition skill is an important component in reading. Beyond reading the words, it is important to know what they mean, if comprehension is to go well. Thus, teaching of vocabulary makes sense, although it also makes sense to teach students to be sensitive to context clues that are revealing about the meanings of words encountered in readings. Although the extent of readers' vocabulary often is revealing about their knowledge, knowledge is more than just knowing words. There are funds of cultural knowledge possessed and known by literate people. One way that literate people develop such funds of knowledge is through extensive reading of the good stuff. Encouraging reading of excellent literature and information books is a critical component of the development of long-term comprehension skills.

Without a doubt, however, there has been more researcher attention to the teaching of comprehension strategies than to any other approach to development of comprehension abilities. Such research has paid off, for it is now clear that elementary students can be taught a variety of comprehension strategies, with the most important finding being that they can be taught small repertoires of comprehension strategies. With long-term instruction and guided practice, student comprehension abilities are affected positively.

That brings the discussion back to the starting point of this chapter. Is it possible to develop readers who are as active and effective as the very best of readers, like the most impressive readers documented in the verbal-protocol studies? We do not know at present, but there are reasons to be optimistic. For one, when the processing of excellent readers is examined, it involves a great deal of predicting based on prior knowledge, question asking, creating mental images, relating ideas in text to prior knowledge, monitoring and seeking clarification when confused, and summarizing—which, of course, are the strategies taught in transactional strategies instruction. In addition, much of what is impressive in the verbal protocols is the extensive knowledge base that good readers can relate to what they read. By encouraging students to read the good stuff and to immerse themselves in high-quality ideas, we can hope to create future generations that are at least as knowledgeable as present readers.

FINAL COMMENTS

We tried to construct a realistic appraisal of what is known about comprehension instruction, although one that clearly sends an optimistic message: Much can be done to develop readers who are better comprehenders. Even so, it is not going to be easy, with the call here for systematic, high-quality instruction of reading competencies for years of schooling. There are no quick fixes.

Reading researchers continue to do much hard thinking and a great deal of research on the problem of comprehension instruction (Block & Pressley, 2001). The reason that comprehension instruction is not more prominent in the American schoolplace is not researcher inattention. Somehow even highly relevant instructional research is not getting translated into practice.

A real challenge to implementation is that teachers have resisted doing comprehension instruction in the past, even when they have been given high-quality professional development opportunities to develop their skills in developing their students as comprehenders (Pressley & El-Dinary, 1997). Keene and Zimmermann (1997) offered the hypothesis that one way to overcome teachers' resistance is to get them hooked on being good comprehenders themselves, by teaching them explicitly to use the comprehension strategies used by really good readers. This suggestion by Keene and Zimmermann highlights that comprehension instruction is not only a problem for K–12 educators but for all who are concerned with developing more literate readers. We think that testing Keene and Zimmermann's hypothesis in the near future makes a great deal of sense.

If teachers could be taught to be better comprehenders through comprehension strategies instruction, they, in turn, would be more willing and able to teach their students how to comprehend. This would be an important demonstration about how it makes sense to think about educating everyone to be better comprehenders, with it likely that the sophisticated comprehension processes covered in this chapter would become more prominent in the reading of many more Americans, for more competent elders would be in a better position to teach their children.

The real prize that we are eyeing is a nation that can read with better understanding.

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CHAPTER 4

INTERVENTIONS FOR CHILDREN EXPERIENCING EARLY READING DIFFICULTIES

Rebecca Barr

There is agreement in our nation that all children must learn to read. This commitment has arisen in part from a body of research indicating that we possess the knowledge and the means to realize this goal. Many children are currently making good progress in learning to read, but there is subset of children who are of concern. The good news is that special educational interventions have proven effective in altering the slow progress of this set of children so that they have become able to benefit from classroom instruction. It is the purpose of this chapter to review the research concerning early reading interventions and to draw implications for school policy.[1]

I believe it is important to summarize the results from intervention research at this time for several reasons. First, early reading interventions have been the focus of considerable research activity. A number of useful analyses have been developed that provide the basis for a reliable synthesis. Second, the results from the research warrant the derivation of policy implications. In the end, we study interventions not only to know more about the process of reading development in a theoretical sense but also for their assumed utilitarian value—to inform teachers and administrators so they can help all children, particularly those lagging behind, to become literate.

EARLY READING INTERVENTIONS

What does *intervention* mean? Early use of the term refers to the divine origin of intervention. More recently, according to the Oxford English Dictionary, it has come to mean "the action of intervening, 'stepping in,' or interfering in any affair, so as to affect its course or issue." In the area of reading research and practice, *intervention* is a term that has recently attained prominence. A search of the ERIC literature reveals that the term was rarely used in the 1970s and only a little more frequently in the 1980s.[2] In contrast, in the 1990s great numbers of studies described individual, small-group, or class interventions designed to alter the course of children's reading development.

Substance of Early Interventions

Many researchers and educators currently believe that early literacy programs designed to develop young children's reading comprehension should focus on two fundamental sorts of knowledge: (a) knowledge of print and (b) facility with language and word meanings (Whitehurst & Lonigan, 1998). In the area of print-related knowledge, instructional activities are needed to help children understand the alphabetic nature of English writing (Adams, 1991; National Reading Panel, 2000; Snow, Burns, & Griffin, 1998). Interventions focused on phonemic awareness, for example, help children realize that spoken words are composed of sounds. Similarly, instruction in letter–sound knowledge helps children to associate the sounds of words with printed letters. Some children can infer this knowledge through reading and writing, but others profit from explicit instruction. Not all classroom programs develop this knowledge effectively for all children. Similarly, some children do not become fluent readers of text and require special interventions to promote their fluency. Hence, in a variety of ways, special interventions may be needed to supplement existing programs in developing children's knowledge and proficiency with print. There are a sufficient number of research studies in these areas on which to base the derivation of policy implications.

The development of comprehension and language concepts also needs to be supported in kindergarten and in first and second grades (Beck & McKeown, 2001; Biemiller, 2001). But these areas have received relatively little research attention. The National Reading Panel (2000) located several comprehension studies pertaining to second graders, but almost none for first graders and none for kindergarteners. The panel identified only nine reports pertaining to vocabulary in kindergarten and in first and second grades, and most of these focused on storybook reading. Indeed, only

the practice of storybook reading has been studied in a sustained fashion in the preschool and kindergarten years. This research supports the conclusion that children's vocabulary is enhanced by focused instruction in which teachers read aloud conceptually challenging materials and explain the meaning of new words.

In sum, interventions in the areas of phonemic awareness, phonics, and text-reading fluency may enhance children's facility with print. Similarly, exposure to new ideas through materials read aloud and discussed may enhance children's vocabulary and language concepts. Thus, it is appropriate for classroom teachers to consider such interventions. But before interventions should be put in place, teachers and other school policymakers need to examine the nature of existing classroom reading programs. If, for example, classroom programs strongly emphasize phonemic awareness or phonics, there may be little or no need to supplement instruction through intervention in these areas. The policy implications that derive from recent intervention research should be applied not blindly but responsively, following an analysis of the existing classroom reading and writing programs.

Types of Early Reading Interventions

Interventions tend to be of two main sorts: (a) comprehensive interventions representing new or restructured literacy programs designed for classes and for individuals or subgroups of children who do not respond well to existing programs, and (b) focused interventions for classes, subgroups, or individuals that supplement existing programs with skills or knowledge to facilitate children's development. The main types of interventions are shown in Table 4.1.

Under *comprehensive classroom programs*, those designed for classes include a set of integrated activities to develop knowledge of print, text fluency, and language concepts. These class programs include a range of designs such as basal programs, whole language programs, special interventions such as Success for All, and the like. When first implemented, they represent a new adoption or a restructuring of an existing literacy program. Such classroom programs *will not* be discussed in this review. The reason for this exclusion is that I have accepted classroom instruction as given. Instead, I will focus on supplementing existing classroom instruction.

I have chosen this stance in part because the research literature on alternative forms of classroom instruction has found phonics, basal, and whole language programs to be similar in effectiveness (Stahl, McKenna, & Pagnucco, 1994). Even the 10 first- and second-grade classroom comparisons of whole language instructional emphasis with that of phonics (either systematic or involving a variety of approaches) reviewed by the National

Reading Panel (2000) revealed a wide range of effectiveness, with phonics programs sometimes more effective and other times whole language programs more effective. There was only a small differential advantage on average for programs that favored a phonics emphasis (unweighted mean $d = 0.15$; weighted mean $d = 0.19$).[3] Thus, if the classroom programs serve the needs of most children, the evidence suggests that a change need not be made in existing classroom literacy programs. Instead, it is more appropriate to fine-tune instruction in ways recommended below. However, if the classroom program is not effective with many children, no amount of fine-tuning will help. A supportive classroom literacy program will need to be developed.

Table 4.1. Comprehensive and Focused Literacy Interventions for Classes, Small Groups, and Individuals

	Comprehensive Interventions	*Focused Interventions*
Classes	Classroom literacy programs that are commercial or teacher designed, entailing a balance of daily activities involving word study, text reading, word meaning, comprehension, and writing with the class and independently. Examples include approaches based on a whole language philosophy, basal programs, Success for All, and the like.	* Instructional programs focused on a particular skill or strategy to complement the existing classroom program. Examples include instruction in phonemic awareness, phonics, fluency, and word meaning.
Small Groups	* Small-group programs involving word study, writing, text reading, word meaning, and comprehension to support the development of children who are falling behind their classmates. Examples include restructured Title I programs and other comprehensive small-group programs.	* Focused instructional programs for small groups of children needing explicit instruction in selected areas. Examples include instruction in phonemic awareness, phonics, fluency, and word meaning.
Individuals	* Individual tutorial programs involving word study, writing, and text reading to support the development of children who are falling behind their classmates. Examples include Reading Recovery and other tutorial programs.	* Focused instructional programs for individual children needing explicit instruction in selected areas. Examples include individual instruction in phonemic awareness, phonics, fluency, and word meaning.

* *Note.* Interventions in these areas will be the focus of this review.

Classroom literacy programs may be enhanced through *focused interventions*. Beyond this, there may also be a need to provide focused support for the literacy development of subgroups of children or individuals who are having special difficulty attending and learning in the classroom. These interventions focus on an aspect of literacy learning and are seen as supplementing an existing program. If deficiencies are indicated through assessment at the beginning of the school year and through ongoing assessment, then classes with weaknesses in particular areas of literacy or children within classes who fail to make progress with the regular classroom literacy program may need to be provided with focused instruction in such areas as phonemic awareness, phonics, fluency, and vocabulary development.

There is also a set of *comprehensive interventions* for individuals and small groups that integrate a focus on print-related knowledge and text fluency and comprehension with the development of language concepts. Reading Recovery is a comprehensive intervention that has received the most research attention (Shanahan & Barr, 1995). The model of Reading Recovery has inspired a set of similar interventions for small groups and individuals that has also proven effective with children who are not progressing well and would profit from special support. This review will consider this group of comprehensive literacy interventions for young children.

The remainder of the chapter is organized into five sections. In the first, I review the literature in four areas of focused literacy intervention: phonemic awareness, phonics, text fluency, and language concepts (storybook reading). Interventions in these areas may be provided to the class as a whole or be organized for subgroups and individuals needing special support. In the second section, I focus on the research pertaining to comprehensive individual and small-group interventions. In the third, I describe policy implications for kindergarten and first- and second-grade reading instruction. In the fourth, I describe ways in which assessment evidence may be used in implementation of these policies. The chapter concludes with a summary.

FOCUSED INTERVENTION PROGRAMS

The first three print-related interventions described in this section are appropriate at different stages in the development of reading knowledge. Ehri (1998), in her developmental formulation of children's ability to read words, describes a four-phase scheme. In the *prealphabetic phase*, children can recognize sight words by remembering one or two visual cues related to the word but ignoring other cues; they may have limited knowledge of letter names and be unable to decode. In the *partial alphabetic phase*, they are able to read sight words by remembering one or several letters in words

that relate to sounds of the word; they know most alphabet letter names and can represent some sounds in invented spelling. In the *full alphabetic phase*, they know some letter names and sounds and are able to read sight words by remembering their spellings. In the *consolidated alphabetic phase*, they can decode unfamiliar words rapidly, are learning spelling patterns, and are in control of an increasing number of words recognized on sight.

If we use Ehri's developmental sequence to help us think about how children progress from one phase to another, it would seem that instruction in phonemic awareness is appropriate for kindergarten children in the prealphabetic phase to help them move into the partial alphabetic phase. Phonemic awareness experiences will help children become aware of the alphabetic nature of English. Instruction in phonics is appropriate for kindergarten and first-grade children in the partial alphabetic phase and will help them move into the full alphabetic phase. Explicit instruction in letter–sound associations is needed by some children to learn them. Finally, as children enter the consolidated alphabetic phase, some profit from fluency instruction to help them increase their reading rate and recognize words instantaneously.

Phonemic Awareness

A major challenge for children learning to read is to become aware of the alphabetic nature of English—that words are composed of phonemes that relate in predictable ways to letters. Developmental models highlight phonemic awareness as an important precursor to reading acquisition. Phonemic awareness refers to the ability of children to "attend to and analyze the external sound structure of spoken words" (Snow, Burns, & Griffin, 1998). Correlational studies suggest the importance of children becoming aware of phonemes in speech, and a substantial body of research has determined experimentally that phonemic-awareness training has a significant positive influence on learning to read.

This body of experimental research varies along a number of dimensions. Some studies are of short duration, but most extend over at least several months. Some are conducted in laboratory or tutorial settings, others in classrooms. For the studies conducted in classrooms, the instruction may be provided by researchers to control its form and content or by teachers to enhance the applicability of findings. In almost all studies, the phonemic-awareness training is not an integral part of language arts instruction; rather, the instruction is a self-contained supplement to ongoing instruction—an intervention.

A meta-analysis of this body of research conducted by the National Reading Panel (2000) focused on a set of 52 studies of phonemic-aware-

ness interventions published in peer-reviewed journals. Studies of phonemic awareness were distinguished from those of phonics instruction by the fact that phonemic-awareness instruction was "limited to grapheme-phoneme manipulation and did not go beyond this to include other activities such as reading decodable text or writing stories" (p. 2–11). Of these, 41 entailed interventions with English-speaking children. Five of these studies involved preschool children, 20 involved kindergarten children, and 12 involved first graders; the remaining 7 treated the learning of children in second grade and above.[4] The analysis revealed that the interventions focusing on the development of phonemic awareness yielded highly significant results, as represented in the form of an effect size of 0.86 ($d = 0.86$). An effect size is a standard score for comparing treatment gains or losses across studies. It expresses differences between the experimental and control groups in terms of standard deviations. Thus, an effect size of +1.00 means that the experimental sample outgained the control sample by one full standard deviation (Shanahan & Barr, 1995). For the phonemic-awareness studies, an effect size of 0.86 means that the performance of the children receiving special instruction in phonemic awareness showed an increase in their knowledge in this area of 86% of one standard deviation over what their knowledge would have been without special instruction (the control-group performance). Raising the performance of initially low-achieving children by almost one standard deviation means that many will have the knowledge to profit from classroom instruction. The highest gains due to phonemic-awareness interventions were found for preschoolers, followed by kindergartners, and then by first graders and older children. The gains were more moderate for outcome measures that involved reading, with preschoolers profiting significantly more than other groups of children. Students of both low as well as mid-high socioeconomic status benefited from the phonemic-awareness intervention.

An examination of the characteristics of instruction suggests that phonemic-awareness interventions are more effective when (a) letters are involved as part of instruction rather than not,[5] (b) one or two skills are taught rather than many, (c) children are taught in small groups rather than as a class or individually, and (d) instruction lasts between 5 and 18 hours spread out over a school year rather than lasting for shorter or longer periods. Interventions that exceeded 18 hours were significantly less effective; however, less than 5 hours of instruction may be effective with preschoolers (National Reading Panel, 2000).

Phonics Instruction

Disputes over the most effective way to teach children to read extend back into the eighteenth and nineteenth centuries and have continued through the twentieth century. A variation of this debate emerged in the 1980s over the value of the whole language approach in comparison with systematic phonics and traditional approaches.

Although the development of phonics is sometimes discussed along with phonemic awareness, technically they are different. Phonics involves the teaching of letter–sound associations, decoding, and blending. My goal is to consider phonics interventions that supplement classroom programs. Yet this proves difficult, since most reviews of this literature fail to distinguish phonics instruction that supplements ongoing instruction from that involving classroom programs. Moreover, many studies do not document the various literacy activities that children experience in addition to the phonics intervention that is the focus of research.

Some phonics interventions emphasize learning letter–sound associations and sounding out and blending of sound into words (synthetic or systematic phonics). Other programs teach decoding with larger subunits of words in addition to letter–sound associations. Both of these, as well as other phonics approaches, are typically compared to instruction in which the teaching of phonics may be opportunistic and less systematic; typical comparisons include basal programs, whole language instruction, and whole word emphases. The research comparisons help us to understand the value added when children learn phonics explicitly and systematically. They may provide the basis for suggesting that an existing instructional program needs to be modified or complemented with an intervention targeting phonics concepts.

This body of experimental research varies. Some studies were of short duration, but most extended over the period of at least a year. Some were conducted in classrooms, but others involved pullout programs. In most programs, teachers shaped instruction to respond to student learning, but some involved scripts for teachers to follow. In some studies, the phonics teaching seemed to be an integral part of reading and writing instruction. In others, there was little relationship; the instruction was a self-contained supplement to ongoing instruction.

A meta-analysis of this body of research conducted by the National Reading Panel (2000) focused on a set of 38 studies involving phonics instruction. Of these, 6 studies involved kindergarten children, 12 involved first graders, and 5 involved second graders. Students in a majority of the comparisons ($n = 13$) were considered to be at risk. The analysis revealed that systematic phonics instruction resulted in moderately beneficial results ($d = 0.44$) in comparison with instruction that involved less systematic forms

of phonics instruction. Synthetic phonics was more beneficial ($d = 0.45$) than phonics instruction involving larger subunits of words ($d = 0.34$). Results were more positive for kindergarten ($d = 0.56$) and first-grade children ($d = 0.54$) than for older children ($d = 0.27$). Most of the children in the kindergarten sample were at risk. Systematic phonics was more effective for children at risk in first grade ($d = 0.74$) than for normally achieving first graders ($d = 0.48$). Students of low socioeconomic status benefited more than others. The instruction across all grade levels was similarly effective when children were tutored, instructed in small groups, or taught as a class. For kindergartners and first graders, the results were most substantial for the outcome measures of decoding regular words ($d = 0.98$), moderate for spelling ($d = 0.67$) and comprehending text ($d = 0.51$), and low for the few studies that measured oral reading ($d = 0.23$).

Text Fluency

Following the beginning stages of learning to read, some children become fluent readers—they are able to read text quickly, with expression and comprehension, and with few miscues. How does this happen? In the 1970s, researchers argued that fluency was a product of sight-word automaticity—learning to recognize words quickly and effortlessly. And while this is true, practical experience has taught us that fluency comes mainly through contextual reading practice, not drill with isolated words (although the latter may also be helpful with some children). Through contextual reading, children consolidate their knowledge of sight words and learn to focus on meaning. Sight-word automaticity is important precisely because when children can focus less attention on word recognition, they are free to focus more on the meaning of what is being conveyed (Stanovich, 1980).

There appears to be a continuum in the development of fluency. In the initial stages of learning to read, children often read in a word-by-word fashion, with a number of miscues. Even while an increasing number of words are read accurately, the conscious effort of children is still apparent. Through additional reading practice in first and second grade, children expand the number of words they recognize accurately and without effort. Stanovich (1980) reports that "most high frequency words are automatized to adult levels by the third grade" (p. 60). Yet reading rate continues to increase after words are recognized automatically, and the silent rate of readers progressively exceeds their oral reading rate.

How can teachers help children to become fluent readers? Many studies have established that children who become fluent readers are those who read a lot (National Reading Panel, 2000). Yet it is not clear from this evi-

dence whether reading a lot causes fluency or fluency leads to more reading, or if both of these have some other underlying cause. Recent experimental research provides some evidence on this issue. The most comprehensive evidence on how to improve reading fluency comes from the National Reading Panel (2000). The instructional research they reviewed fell into two main groups: (a) guided oral reading practice and (b) independent silent reading practice. Studies selected for analysis were experimental in design and included students in kindergarten through Grade 12. Only a few studies, however, involved students from kindergarten and Grades 1 and 2—those that we are most interested in here.

Guided oral reading studies involved such approaches as repeated reading, neurological impress, and paired reading. Each helped students to develop fluent reading through repeated oral reading practice and guidance. Fluency training tended to be relatively brief (15 to 30 minutes several times a week) and conducted while students were concurrently engaged in other classroom reading activities. Conclusions about the effectiveness of these instructional approaches were based mainly on a meta-analysis involving 14 of the 16 experimental group studies. Results were moderately significant ($d = 0.55$) for word recognition outcomes, modest ($d = 0.35$) for reading comprehension, and somewhere between for fluency ($d = 0.44$). Generally, the results were sufficiently positive to conclude that guided repeated oral reading is an effective means to help students improve their fluency. The results for second-grade students and for learning-disabled and transitional second-grade students were similar to the more general findings.

Approaches such as sustained silent reading (SSR) and DEAR (Drop Everything and Read) are in common use in elementary schools. Typically, students read silently for about 20 minutes a day with no teacher monitoring. Yet only 14 studies were identified in the National Reading Panel (2000) that involved experimental comparisons assessing the effectiveness of silent reading practice. In some comparisons, independent silent reading was compared to other forms of reading instruction, and in others, to other nonreading activities. Outcome measures varied from study to study, including comprehension, vocabulary, attitudes, and general reading achievement; none included measures of fluency. Moreover, results tended to show no difference between the experimental and the control groups on the outcome measures. The results from studies involving second graders were similar. Thus, there is no evidence leading us to recommend this practice at this time. Further research is needed, particularly in the primary grades, to test the effectiveness of silent reading practice and to determine which forms of teacher monitoring are most effective.

Vocabulary: Storybook Reading

Children in the preschool years increase their knowledge of word meanings and learn how to form words into meaningful units. Conversations within families and other environmental factors influence the developing language of children in the preschool years. Storybook reading, to be discussed later in this section, has been shown to have a significant influence on the development of receptive and expressive language in some studies (see Whitehurst & Lonigan, 1998). Once children begin formal schooling, they must become able to comprehend more decontextualized forms of language used in the stories and informational books they hear and in the books they read. Although the reading materials in the primary grades are often not challenging conceptually, once children begin reading more informational books and receive content area instruction later in the primary grades (Grades 3 and 4), they encounter a high loading of unknown vocabulary and unfamiliar sentence structures.

By the time children enter kindergarten, wide discrepancies have been observed between the vocabularies of children of high and low socioeconomic status. Further, although some vocabulary growth occurs in kindergarten and in first and second grades, it is not what we might expect if children were experiencing conceptually challenging materials and explicit forms of instruction (Biemiller, 2001). Children's vocabulary has been shown to have a strong relationship with reading comprehension, although only a few studies have been successful in demonstrating a causal connection. Nevertheless, few would disagree that an important educational objective should be to help children develop their knowledge of word meanings and command of language structures.

Storybook reading has been the focus of extensive research. Sulzby and Teale (1991) in their review of this literature emphasize several characteristics of storybook reading, including its social nature; that is, the words being read from text do not occur in isolation but are elaborated through explanations, comments, and questions. These social-interactional patterns differ for parents and for teachers, but for any particular individual, a stable pattern can be identified. Indeed, the predictable and recurring pattern of storybook reading seems to enable children to participate. Descriptive studies also show that interactional patterns are responsive to such characteristics of children as their age, development, and past experience with storybook reading, as well as to the type of book being read and to the familiarity of children with particular stories.

Many investigations of storybook reading focus on parent–child storybook reading and explore its consequences for the literacy development of children. It is widely believed that storybook reading has strong effects on later literacy development. Bus and van IJzendoorn (1995), in a meta-anal-

ysis of this literature, concluded that parent–child storybook reading does have significant consequence for language growth, emergent literacy, and reading achievement.

Out of this large body of research on storybook reading, we are concerned with those studies conducted in preschool and primary-school classrooms. Unfortunately, there are few experimental studies of how teachers can help children in the primary grades to develop their knowledge of word meanings. The National Reading Panel (2000) located five comparisons of vocabulary learning involving kindergartners, two for first graders, and two for second graders. And with a few exceptions in which children read the materials themselves, most involved storybook reading by teachers to children. Experimental research has shown that when teachers read storybooks aloud in preschool and primary classes, their explanations tend to enhance the vocabulary development of their students. When teachers make comments and ask open-ended questions, children respond with more complex comments than when factual questions are asked. More complex comments are associated with improvement in children's listening comprehension and expressive language.

Particularly among children of low socioeconomic status, it seems better to read the same books repeatedly over time than to read many different books. Informational books as well as storybooks should challenge the conceptual development of children and stimulate their interest in reading. Moreover, when children read or "pretend read" the books their teachers have read aloud to them, their understanding of written language and story structure tends to be enhanced.

COMPREHENSIVE INTERVENTION PROGRAMS

Special tutorial and small-group interventions gained prominence in the 1960s with the advent of federal Chapter 1/Title I funding. However, the modest effectiveness of these pullout programs, coupled with the loosening of restrictions on the use of federal funds, laid the basis for the development of alternative early literacy models in the 1980s and 1990s. In this section, I focus only on special support for slowly progressing children, not those who should be able to learn well from balanced classroom instruction. I focus first on Reading Recovery, which has received considerable research attention, then on other tutorial and small-group interventions designed for children at risk.

Reading Recovery

Reading Recovery was developed in New Zealand in the 1970s by Marie Clay (1979). This program has influenced the thinking of a generation of literacy educators. In the 1970s, special reading instruction was typically offered to children after they had failed to learn to read well, usually in the second or third grade and above. Generally, trained reading specialists taught basic reading skills to individuals and small groups.

The approach of Reading Recovery contrasted with skills-based tutoring in several respects. First, instruction was offered to children at the age of 6 years after a year of instruction, rather than later. Second, the format of the lesson was comprehensive. Children read extensively from a series of books that were graded in difficulty, and they received writing support that focused on letter recognition, phoneme awareness, letter–sound representation, and word writing. Third, assessment was an integral part of every lesson and served as the focus of subsequent work. Fourth, Reading Recovery teachers received intensive training that was based on observation of practice. Finally, the standard for determining success was modified. In most prior experimental assessments of tutorial effectiveness, the standard was a significant difference between a control and an experimental group, and this criterion continues to be used in many studies. Reading Recovery was among the first to define a successful intervention as one that brought children from the lowest 20% of a class up to the average so that they could profit from class instruction.

How successful has Reading Recovery been in achieving this goal? Experimental comparisons have shown that many students receiving Reading Recovery are brought up to the average of their class. However, some children (10 to 30%) do not achieve this goal. Average estimates of program effectiveness are high (in the range of $d = 0.70$ for vocabulary and $d = 0.92$ to 1.50 for reading comprehension). Concerns about the program center mainly around its cost.

Other Comprehensive Interventions

Influenced directly or indirectly by the approach of Reading Recovery, a number of comprehensive early interventions for individuals and small groups were developed and tested in the 1990s. In addition, reviews have been made of programs involving volunteer tutors.

Tutorial programs

Because results from studies of tutorial instruction in kindergarten are just beginning to appear, it is premature to draw conclusions at this time.

In contrast, more tutorial programs have been developed for first graders. The National Reading Panel (2000) showed that tutorial programs similar in design to Reading Recovery have realized similar results (for example, $d = 0.93$ for word identification and $d = 0.73$ for comprehension). One study following the model of Reading Recovery, but with more explicit forms of word study, realized particularly successful results in the area of word identification ($d = 2.94$). Strong results have also been shown for the tutorial component that is coupled with classroom instruction in Success for All (for word attack, $d = 0.51$ to 4.22, and for reading, $d = 0.37$ to 1.79). Generally, it can be concluded that various forms of tutorial instruction will enhance the learning of those first graders who are at risk of failure. As for kindergartners, few tutorials have been developed for slowly progressing second graders: thus, it is premature to draw conclusions at this time.

Small-group programs

Similarly, small-group programs have been designed specifically for children making slow progress. Programs in phonemic awareness and phonics described previously have been found to be effective for kindergarten and first-grade children taught in small groups. In addition, there are a number of comprehensive instructional programs that combine a focus on repeated reading and comprehension of graded books with phonics, word study, and writing. For example, in their review of beginning reading interventions, Hiebert and Taylor (2000) reported that such programs tend to promote progress. In one involving small groups composed of three children, gains were made in word recognition ($d = 1.39$) and text reading ($d = 1.16$); in another with groups of six or seven, children showed moderate gains on a standardized reading test ($d = 0.48$). When a small-group version of Reading Recovery was compared with the tutorial format, it was also effective ($d = 0.41$ in text reading), but less so than the tutorial model ($d = 1.50$ in text reading; Pinnell, Lyons, DeFord, Bryk, & Seltzer, 1994). These results suggest that small-group instruction may greatly enhance the progress of kindergarten, first-grade, and second-grade children; yet the advantage for small-group instruction may be less than for tutorial instruction.

Volunteer tutoring

Stimulated by the America Reads Challenge Act of 1997, numerous volunteer tutoring programs have been developed across the nation. They vary in content, design and supervision, although a number seem to reflect the Reading Recovery model, which includes reading and rereading leveled books, writing, and word study (including a focus on phonemic awareness and letter–sound associations). Only 3 of the 17 studies reviewed by Wasik (1998) included equivalent treatment and comparison groups to assess program effectiveness. One of these involving second and third grad-

ers realized a moderate advantage on word recognition (d = 0.61 to 0.68) and substantial advantage on oral reading (d = 1.07 to 1.77). Yet there was considerable variability within samples. Given the limited number of controlled evaluations, it is premature to draw conclusions about the potential contribution of volunteer tutoring.

POLICY IMPLICATIONS

This review has focused on four areas of early literacy development about which there is sufficient research evidence to make recommendations for focused interventions into classroom practice. These are phonemic awareness, phonics, and text fluency in the area of print-related knowledge and vocabulary development through storybook reading in the area of language concepts. In addition, the research literature pertaining to comprehensive forms of tutorial and small-group instruction for children progressing slowly is of sufficient size. Policy implications can be drawn on the basis of this research to facilitate the literacy development of all children.

Focused Intervention Programs

Phonemic awareness

A substantial number of studies have been conducted with kindergarten and first-grade children. The results show that children who become aware of the sounds in words also become better spellers and readers. The findings also show that not much time is required. As little as 5 to 18 hours, in minilessons over a school year, is sufficient; more time beyond this is counterproductive. Activities to develop children's awareness of sounds include the study of sounds in children's names and how they are written, spelling and writing activities, listening to words before identifying initial sounds, and listening to two or three words and identifying other words that begin the same way. Instruction focused on one or two activities achieves better learning than that focused on more. Instruction in small groups and individually is more effective than with the whole class. Better results are obtained for instruction offered in kindergarten and in first grade than for instruction later.

Some argue that children will eventually develop this knowledge as they learn to read, but this is to miss the point. When children have this awareness early in learning to read, they can make use of this knowledge as they explore words and their representations. This knowledge provides the bridge to understanding the alphabetic nature of English. Therefore, instruction in phonemic awareness should be part of all kindergarten programs.

Phonics

A substantial number of studies have been conducted with kindergarten and first-grade children; relatively few have involved second graders. Those for kindergarten pertained mainly to children at risk; those for first grade pertained to unselected classes as well as to students at risk. The results suggest that at-risk children in kindergarten and first grade, as well as normally progressing readers in first grade, profit from explicit instruction in phonics. Thus, classroom programs should include explicit instruction in letter–sound associations. The evidence is limited concerning second grade, and that which does exist suggests only a small advantage for more explicit forms of phonics instruction at this level.

Text fluency

The results from research are sufficiently positive to conclude that guided repeated oral reading is an effective means to help students improve their fluency. The results for second-grade students and for learning-disabled and transitional second-grade students were similar to the more general findings; no first graders were included in the meta-analysis. In contrast, studies involving silent sustained reading and other forms of reading practice did not show improved vocabulary or comprehension; fluency was not tested. Thus, there is no evidence to support the use of this practice at this time. Further research is needed, particularly in the primary grades, to test the effectiveness of silent reading practice and to determine the forms of teacher monitoring that enhance reading fluency.

Vocabulary: storybook reading

Because of the wide discrepancies between the vocabularies of children of high and low socioeconomic status, it is important to provide children, especially those progressing slowly, with more conceptually challenging materials and organized forms of instruction. Although more studies of primary-grade teachers are needed, experimental research supports the effectiveness of teacher comments, explanations, and open-ended questions during storybook reading to enhance vocabulary and language development.

Comprehensive Intervention Programs

The research on a variety of tutorial and small-group programs was reviewed. These programs have been designed for children at risk of academic failure because of their slow literacy progress. Generally, it can be concluded that various forms of tutorial instruction will greatly enhance the learning of first graders who are at risk of failure. Since relatively few

tutorials have been developed for slowly progressing kindergarten and second graders, it is premature to draw conclusions at this time. The research shows that small-group instruction will enhance the progress of kindergarten, first-grade, and second-grade children. There has been little comparative research on the advantages of tutorial versus small-group instruction, although one study did find that first graders learn less in small groups than in tutorials.

POLICY IMPLEMENTATION

This review of recent reading intervention research lays the basis for thinking about literacy instruction in kindergarten, first grade, and second grade. As discussed earlier, in this review I have accepted classroom instruction as given and have instead focused on supplementing existing classroom instruction.

Interventions are an effective way to refine existing classroom programs. How can this be done? As a first step, it is important to know the characteristics of classroom literacy programs and how well they serve all children, particularly those who have a hard time learning to read. Some form of early literacy assessment is needed to know this. This assessment enables teachers to determine the sorts of interventions that are needed.

In the following sections, I describe how assessment information may be used to determine the need for (a) focused interventions that enhance existing programs and (b) comprehensive tutorial and/or small-group instruction for children who are lagging behind. I use an early literacy assessment that is being developed in the state of Illinois (Barr, Blachowicz, & Buhle, 2001) to illustrate this assessment process.[6]

Focused Interventions

Two forms of assessment are useful in determining the need for focused interventions. The first, made at the beginning of the school year, enables teachers and administrators to identify areas related to literacy in which some children have gained extensive knowledge but others have had little prior experience. The second, made at the end of the year, examines the progress made by children in various areas in relation to that normally made by children in a school, district, or state.

Beginning of the year assessment

Figure 4.1 shows the knowledge of kindergarten children at the beginning of the school year in the eight areas tested by the Illinois Snapshot of Early Literacy (ISEL; Barr et al., 2001), both for School A and for norms derived from a set of nine schools in northern Illinois. The areas assessed are alphabet knowledge, listening, phonemic awareness, one-to-one match, letter–sound associations, developmental spelling, word recognition, and graded passage reading. The profile shows that children in School A are only a bit lower than the state norms in most areas. They show relatively strong knowledge of letter–sound associations. Two exceptions are phonemic awareness and developmental spelling. Both of these measures depend on the development of phonemic awareness. These results show that the phonemic awareness knowledge of kindergarten children in School A is low *both* in absolute terms and relative to area norms. A next step would be to review the current literacy programs to see when children are introduced to phonemic awareness and how. If such concepts are not taught explicitly, teachers should develop or select an appropriate program.

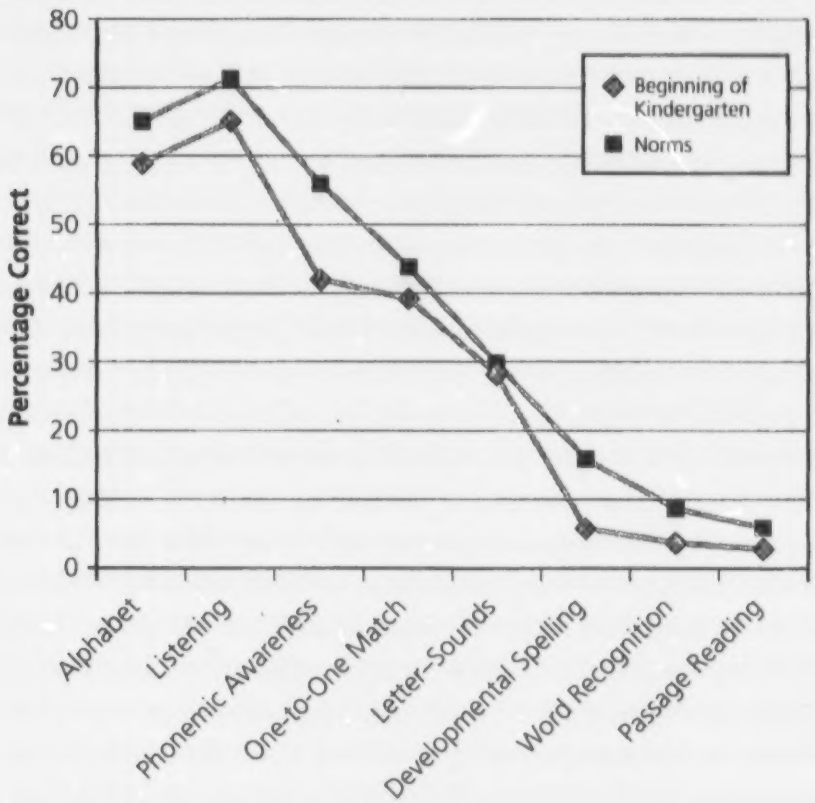

Figure 4.1. School A Literacy Profile.

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End of the year assessment

Another way for teachers and school administrators to assess their early literacy needs is to look at the progress that their students have made in areas related to early literacy development. Given my earlier discussion, four areas of importance are language concepts, phonemic awareness, phonics, and text fluency. Figure 4.2 shows how the kindergarten children in School A did in three of these areas, with language concepts assessed by a listening task, phonemic awareness by a beginning-sound match task and a spelling task, and phonics by a letter–sound task. The figure shows the gains made during kindergarten in School A along with the average gains made by children from other schools in the area.

School A children made no gains in listening, but the figure shows that this was also true for children from other schools. School A children made limited gains in phonemic awareness as indicated by their performance on the phonemic-awareness match task and the spelling task. Their gains were less than half those made by children from other schools in these areas. In contrast, they showed considerable progress in the learning of letter–sound associations, progress similar in magnitude to that shown by children from other schools. This pattern of growth is particularly worrisome, because it suggests that children have received a lot of instruction on letter–sound associations without understanding where the sounds (phonemes) come from or what to do with them. The learning tends to be rote.

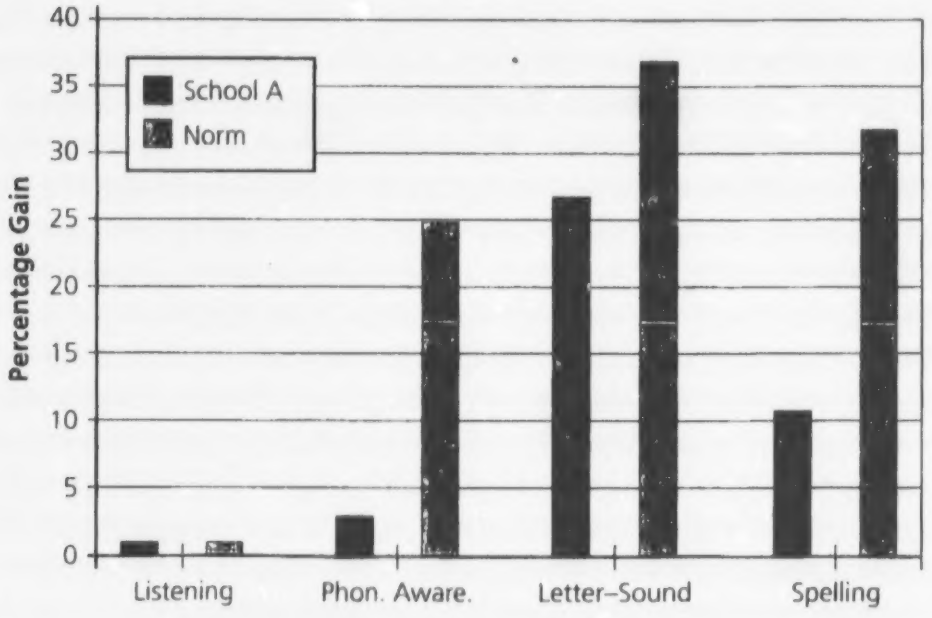

Figure 4.2. Gains in four areas by kindergartners in School A in comparison with area norm gains.

The fact that there is little application of the letter–sound knowledge in spelling suggests that certain important connections are not being made by the children about the alphabetic nature of the language. It also suggests that children are probably not spending sufficient time writing.

Special Tutorials and Small-Group Instruction

How can we identify those children who will not make adequate progress in reading without special support—the children who need to learn enough to be able to profit from classroom instruction? One common practice is to seek teacher suggestions and to consider these in conjunction with information from an early literacy inventory. Ongoing literacy assessment, often informal in nature, is needed to identify children who are not progressing well. All children performing in the lowest 20% the inventory, as well as those whom teachers identify who are not scoring in the lowest 20%, need to be considered for tutorial or small-group instruction. Assessments are more reliable when based on a composite score of several literacy-related measures rather than a single score. Yet even with valid and reliable measures, those selected for special reading support will include some children who would have progressed without support, and there will be some children who end up doing poorly who were not identified. Using pre- and posttest data from the ISEL, we found that selection was slightly more accurate in kindergarten than in first grade. For the kindergarten sample, about a sixth of those who scored below the 20th percentile on a composite measure made adequate progress without help. Moreover, a similar number of children not identified by the screening ended up not doing well. For the first-grade sample, about a quarter of those who scored below the 20th percentile on a composite measure would have made adequate progress without help, and a similar number of children who ended up not doing well were overlooked by the screening. While most children needing help are identified, the overlooked children show that an ongoing process of monitoring the progress of children needs to be put in place by schools.

Assessment tools and procedures such as the ones just described are useful in determining whether selected interventions are appropriate. This assessment information is useful in the selection and monitoring of children who are making little progress learning to read. These decisions should be based on ongoing assessment, as well as on more comprehensive assessments made at the beginning of the school year.

SUMMARY

This chapter describes early reading interventions and how they may be used to enhance existing classroom literacy programs and to support the reading development of small groups and individual children who are not progressing well. After a summary of policy implications for kindergarten, first-grade, and second-grade reading instruction, methods for implementing these policies using assessment evidence were considered. These intervention approaches will help teachers and administrators achieve the goal of creating school literacy programs through which all children learn to read.

NOTES

1. I wish to acknowledge the comments of Camille Blachowicz, Roberta Buhle, Vinita Chhabra, Roberta Dreeben, Carlos Martinez, and Terry Salinger, which were helpful in refining this chapter.
2. A search of the ERIC database using the descriptors "intervention," "reading," and "early childhood/elementary education" yielded a set of 243 studies. Of these, 6% were published during the1970s, 10% during the 1980s, and 84% during the 1990s and the year 2000, with the majority appearing in the past 5 years.
3. In their review of studies involving phonics instruction, the National Reading Panel (2000) grouped classroom studies together with small-group and tutorial interventions. The average effect size (see definition in text) for studies comparing classroom programs with other classroom programs was less on average than for small-group and tutorial comparisons. Thus, the combined effect size for all phonics interventions should be applied to classroom programs with caution.
4. Three studies included children from two different grade levels
5. Although letters were used along with phonemes in some studies, the goal was hearing the phonemic components of words, not learning letter–sound associations, writing, or decoding words.
6. The English version of the Illinois Snapshot of Early Literacy (ISEL; Barr et al., 2001) was developed and field-tested in nine schools in northern Illinois in 2000–2001. ISEL norms based on a statewide sample are currently being developed in 2001–2002. For the purpose of this chapter, "area norms" were derived, based on the average performance of 232 kindergarten children from the nine field-test schools in northern Illinois and of 221 first graders from the same set of nine schools. Because the norms are based on a limited sample from only one region of the state, they should not be used more generally as norms for the ISEL.

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CHAPTER 5

FROM POLICY TO PRACTICE

Using Literacy Standards in Early Reading Instruction

Deanna Birdyshaw, Ellen Pesko, Karen Wixson, and Nina Yochum

The purpose of the chapters in this volume is to highlight what we know about specific aspects of reading instruction, in this case standards and assessments, and how best to implement what we know. Unfortunately, there is little research to inform us about the role of standards and assessments in teachers' practice. We know a lot about the relationship between the inputs and outputs associated with standards-based reform efforts, but very little about the relations between standards and quality teaching and learning. Quality teaching and learning can be viewed as the "black box" between the inputs and outputs associated with standards-based reform that needs to be further illuminated. This chapter[1] describes our effort to document what happens in this black box with three exemplary, K–3 teachers of early reading. These three teachers participated in a project known as "Exemplars," which was designed to create examples of how teachers implement standards in their classrooms and how they document students' progress toward the achievement of state standards. These examples and other related evidence are used to draw implications for instructional practice and policy in reading.

BACKGROUND AND RATIONALE

A recent review found that, in general, policies that are focused on literacy standards and assessments *do* have an influence on classroom practices (Valencia & Wixson, 2000). However, the influence is not always in the expected or the desired direction. The effects of policies are mediated by a large number of factors such as teachers' knowledge, beliefs, and existing practices; the economic, social, philosophical, and political conditions of the school or district; the stakes attached to the policy; the specificity of the policy; and the quality of the support provided to teachers and administrators.

Although there seems to be widespread acknowledgment that teachers play a critical role in enacting standards-based policies, much of the policy research has continued to focus on the inputs—the policies themselves—and the expected outcomes, or outputs, leaving the working space between them unexplored. When that space is explored, it is often through analysis of surface features such as teacher qualifications, school structure, or time spent on particular activities. If we want to understand the effect of policy on the quality of teaching and learning, then we have to look inside the black box of teaching and learning that resides between inputs and outputs.

If the argument for focusing on the quality of teaching and learning seems a bit obvious, as it must to those who work in classrooms, let us assure you that it is not obvious to many who do policy research. Focusing on quality takes time and subject matter expertise, and it is difficult to do on a large scale or under tightly controlled experimental conditions. Examinations of the black box must also look at the contexts in which the teaching and learning exist—the policy environments that surround and filter influences on teaching and learning.

To illustrate our point, we rely on the model in Figure 5.1, which was developed by the Center for the Study of Teaching and Policy (2000, p. 7) and adapted by Valencia and Wixson (2001). This graphic places the black box of "quality of teaching and learning" in the context of conditions and forces that have the most potential to influence what happens in the classroom. Classrooms reside in schools, which reside in districts, which reside in states. Note the term "policy environment," which connotes the array of policies past and present, the contexts from which those policies emerge, the coherence of the policies, and the responses to those policies that all come together to create a policy environment.

The model also reminds us that policy passes through many filters on its way to the classroom, all of which can have a significant influence on the quality of teaching and learning. Policy is not simply handed over; it is shaped by the events, conditions, and players inside and outside the classroom. Furthermore, the filters are bidirectional and interactive. For example, teachers shape how policies are defined in schools, and districts

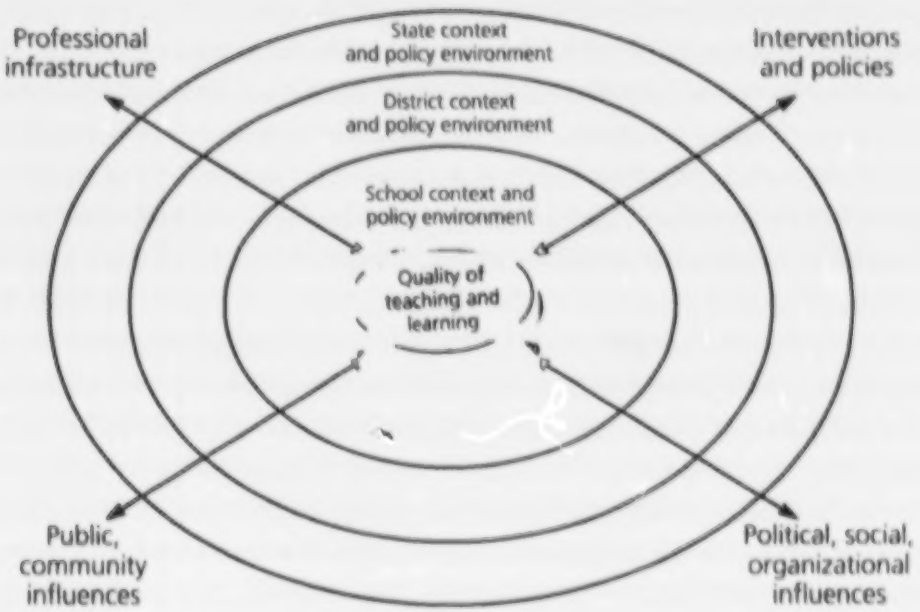
Professional infrastructure
State context and policy environment
Interventions and policies
District context and policy environment
School context and policy environment
Quality of teaching and learning
Public, community influences
Political, social, organizational influences

Figure 5.1. The quality of teaching and learning in context.

influence state and community perceptions and support for new initiatives; ultimately, practice influences policy itself. Taken together, these contexts can support or undermine the policy goals. Consequently what we need, if we are to understand the effects of policies such as those dealing with standards and assessments, is a look inside the black box, a look that considers these contexts and seeks to understand the influence of these conditions and the interactions among them on the quality of teaching and learning.

This chapter reflects our best effort to examine the role of standards and student work in teachers' early reading instruction within the context of the relevant surrounding policy environments. We begin with a brief description of the Exemplars project and the policy environment surrounding the participating teachers and districts.

THE EXEMPLARS PROJECT

The Exemplars project grew out of a larger effort known as MELAF, or the Michigan English Language Arts Framework project. The MELAF project was responsible for developing Michigan's new integrated English language-arts standards, which were adopted by the State Board of Education in 1996 and are the basis for new statewide assessments that are expected to be implemented in 2003. A unique feature of MELAF was its professional development component, which used a policy occasion (the devel-

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opment of state standards in English language arts) to create a network of four "demonstration" districts. Within this network, individual teachers grappled with the implications of standards for their own classroom practice, and districts strategized about the potential role of standards in local education reform.

The professional development effort of MELAF revealed a need to provide exemplars of how teachers implemented the new standards and benchmarks and documented students' progress toward the achievement of the standards and benchmarks. Because the Michigan standards and benchmarks are organized by grade clusters (e.g., K–3, 4–6), there was a particular need for this type of information for the early elementary grades, where the differences in expectations from grade to grade are significant (Wixson & Dutro, 1999). This need resulted in the creation of the Exemplars project, which was designed to provide examples of what the standards and benchmarks looked like in K–3 classroom practice. Nominations were solicited for exemplary teachers, and a group of eight teachers was convened over the course of 2 years for this purpose. The eight teachers were from three school districts, including one of the MELAF demonstration districts. The three districts varied in their degree of implementation of the state English language-arts standards and in their level of student diversity. The teachers also differed in their familiarity with the standards, years of teaching experience, and classroom contexts.

The Exemplars teachers engaged in regularly scheduled monthly or bimonthly after-school meetings during the school year, with more intensive meetings spanning several days during the summers. During meetings, the teachers developed common understandings about the meaning of the standards, about what they looked like in practice, and about methods for documenting and analyzing samples of student work. The project was intended to create examples of how teachers used standards and students' work in their instruction, and in so doing it became an opportunity for professional development for the participating teachers, even though they were already recognized as highly skilled. Because there was limited time available to explore the standards and benchmarks, the group agreed to focus their efforts on creating exemplars for key benchmarks related to the standards on literature, genre and the craft of language, ideas in action, and depth of understanding (See Table 5.1). This resulted in a heavy emphasis on young children's understanding and use of narrative and informational text genres.

Table 5.1. Content Standards and Key Benchmarks

Literature		
All students will read and analyze a wide variety of classic and contemporary literature and other texts to seek information, ideas, enjoyment, and understanding of their individuality, our common heritage and common humanity, and the rich diversity of our society.		
Select, read, listen to, view, and respond thoughtfully to both classic and contemporary texts recognized for quality and literary merit.	Describe and discuss the similarities of plot and character in literature and other texts from around the world.	Recognize the representation of various cultures as well as our common heritage in literature and other texts.
Genre and Craft of Language		
All students will explore and use the characteristics of different types of text, aesthetic elements, and mechanics—including text structure, figurative and descriptive language, spelling, punctuation, and grammar—to construct and convey meaning.		
Explore how the characteristics of various narrative genre and story elements can be used to convey ideas and perspectives. Examples: character, setting, and problem in poetry, drama, and folktales.	Explore how the characteristics of various informational genres and elements of expository text structure (e.g. organizational patterns, major ideas and details) can be used to convey ideas.	Identify and use aspects of the craft of the speaker, writer, and illustrator to formulate and express their ideas artistically. Examples include dialogue, characterization, conflict, organization, color, and shape.
Depth of Understanding		
All students will demonstrate understanding of the complexity of enduring issues and recurring problems by making connections and generating themes within and across texts.		
Explore and reflect on universal themes and substantive issues from oral, visual, and written texts. Examples include new friendships and life in the neighborhood.	Identify and categorize key ideas, concepts, and perspectives in texts.	Draw conclusions based on their understanding of differing views presented in text.
Ideas in Action		
All students will apply knowledge, ideas, and issues drawn from texts to their lives and the lives of others.		
Make connections between key ideas in literature and other texts and their own lives.	Demonstrate their developing literacy by using text to enhance their daily lives. Examples: reading with a parent, writing to a friend.	Use oral, written, and visual texts to identify and explore school and community issues and problems, and to discuss how one individual or group can make a difference.

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POLICY ENVIRONMENT FOR EXEMPLARS TEACHERS AND DISTRICTS

The purpose of our study was to examine the role of standards and student work in the practice of exemplary teachers. We were interested in the interplay of their evolving understanding of standards with their curriculum, instruction, and assessment. We used a case-study approach to document the decision-making processes of teachers as they incorporated standards-based instruction into their classrooms.

The three Exemplars teachers profiled here and their home districts operated within complex policy environments as depicted in Figure 5.1. Michigan has a long history of reform in reading dating back to the mid-1980s, when it set out to redefine reading as not merely a set of skills but a higher order thinking process involving the interaction of the reader, text, and context (Wixson & Peters, 1984). Consistent with this definition, Michigan developed a "new" type of reading assessment, which was implemented in 1989 and is still in use as we write this. This reading assessment includes "authentic," full-length, narrative and informational texts from magazines, textbooks, and other real-world resources, and it features comprehension questions focused on themes and central purposes, on the information supporting these major ideas, and on the metacognitive knowledge essential to comprehending each passage.

The definition of reading adopted in the 1980s was revisited by the MELAF project as it developed Michigan's new integrated English language-arts standards. These new standards are part of Michigan's Core Curriculum, which is designed to guide local districts in establishing a core curriculum as required by law. Because Michigan does not have a mandated curriculum, there is a great deal of local control in how districts work with state standards in developing their own local curricula. Experience with MELAF demonstration districts certainly supports the notion of district variability and the role this plays in teacher learning with regard to standards-based reforms.

Data from MELAF teachers and districts were analyzed to determine the impact of standards-based professional development on teachers' capacities to become change agents in their classrooms and districts, and to determine how individual district contexts shaped the development of those capacities (Dutro, Fisk, Koch, Roop, & Wixson, in press). These analyses revealed that teachers experienced changes in their personal literacy practices and views of themselves as learners and felt an increased ability to evince change in a variety of educational contexts, including their classrooms, buildings, and districts. Teachers consistently spoke of their capacity increasing in the following areas as a result of MELAF professional development: personal growth as learners, ability to model literacy to their

students, increased reflective practice, mentoring colleagues, working for change within and outside their district, professional publishing, and working as advocates in district and state political institutions.

Across the changes in teachers' practices, district patterns emerged that spoke to the individual districts' capacities to support teacher growth and foster reform. These differences suggest that the changes that took place were a function of many factors, including the size and structure of the district, the district's "readiness" for change, and the source of language-arts leadership within the district. One implication of these results is that the particular histories and competing forces that operate for both individuals and districts shape the implementation of new policies such as standards-based reform.

We turn now to a description of the role that standards and the documentation of student work played in the classroom practice of three Exemplars teachers.

VIGNETTES

The three vignettes presented here are representative of the range of the diverse approaches used by the larger Exemplars group to implement standards. They also represent a range of district support for standards-based reform efforts. Ilse is an example of a teacher who was very knowledgeable about the standards and had extensive experience working within a standards-based reform program in her district. Natalie had some prior experience with the standards and working on curriculum development in a district that was not as far along as Ilse's, and Heather had little knowledge about the standards and worked in a district that was in the early stages of standards-based reform. These three vignettes illustrate an attempt to explore the quality of teaching and learning within the context of a standards-based policy environment and to understand how teachers use standards and the documentation of student progress to achieve quality practice, with an eye toward implications for how best to implement standards-based reforms at the classroom and school/district levels.

Ilse

At the time of the project, Ilse was teaching first grade in the mornings and providing professional development for district teachers in the afternoon. She worked in a mid-sized suburban district and was one of four teachers from this district in the Exemplars project. She had 29 years' teaching experience and approached the Exemplars project from within

the context of her district's school-improvement process and from the perspective of her role in these efforts. During an extended period of time preceding her involvement in the project, Ilse served on a variety of district committees charged with developing district English language-arts and science curriculum frameworks. Her experiences also included an extensive background in systems-oriented school improvement, including training in outcomes-based instruction, a curriculum design based on the framework found in the work of Grant Wiggins and Jay McTighe. She used this systems approach in district efforts to develop standards-based thematic units. Her success in designing standards-based thematic units was recognized by the Michigan Department of Education, which asked her to present at statewide professional development conferences.

Ilse's skill at unit design grew out of her use of standards as a vehicle for aligning curriculum, instruction, and assessment. When addressing a standard, she considered simultaneously the content to be learned and an appropriate demonstration of that knowledge. She focused on the developmental level of her first-grade students and reflected on what they already knew. Then she thought about the scaffolding that would be needed to move her students toward demonstration of the standard. She systematically linked one instructional episode to another on the journey to achieving the standards. She noted in an interview: "I really use a backwards planning model. I look at my benchmarks and standards and then think about what significant questions am I going to ask them [students] and what is going to be my evidence that they achieve this."

Building on ideas discussed at the project meetings, she organized meetings with four other colleagues from her district who taught different grade levels and were also involved in the project. They extended the discussion of how to implement the standards and to design a plan for investigating implications for instruction. During their meetings, she and her colleagues first focused on the meaning of standards in their discussions. Then they met again to discuss lesson design and lay out the steps they would follow in their K–3 classrooms, focusing on the developmental needs of their students. They met a third time before coming to the next project meeting to share their experiences and samples of student work. She observed that even though she and her colleagues followed a similar lesson design for a particular benchmark, there were differences in the way the lessons were conducted—they had a "different twist."

Because one of the focuses of her district's school improvement effort was to increase student comprehension of informational text, Ilse and her colleagues selected the standard on genre and craft as an area of concentration. Specifically, they focused on features of narrative and informational text structure that authors use to convey ideas. Throughout the year, Ilse and her group worked on the narrative and informational benchmarks in parallel,

developing their students' understanding of text structures while moving back and forth between narrative examples and expository examples. In a December interview, Ilse talked about the process as it was implemented in her classroom. "We're looking at text structure, the different ways that informational writers organize their books as opposed to someone that's writing a fictional text or narrative fiction text. Also, now that we recognize it [text features], I wanted my students to transfer to their own writing and be able to write it...." Ilse emphasized the importance of helping her first-grade students understand that authors choose a particular genre and that these genres have specific structures that help the author convey their ideas.

Knowing that she wanted to help her first-grade students develop an understanding of how authors use the selection of text structure and text features to convey meaning, Ilse began the school year by building her first graders' understanding of the concept of text structure. She began with narrative text structure and helped her students understand that narrative structure has a beginning, a middle, and an end. Conscious of her students' need for concrete illustrations of concepts, Ilse used a manipulative device to demonstrate the beginning, middle, and end of narrative text structure. She began the study of narrative text structure by looking at nursery rhymes, because they usually have only one event. By using the manipulative device, Ilse gave her students practice retelling a variety of nursery rhymes and simple narratives. At the end of this instructional episode, in small groups students selected a favorite nursery rhyme, drew three pictures depicting the beginning, middle, and end of the nursery rhyme, and then acted it out. Even in this early part of the year, Ilse was busy laying the foundation her students would need to become effective self-assessors. Ilse used a scoring sheet to assess her students' performances. She shared the criteria that emphasized content and presentation style with her students and used this experience to help them begin to understand the role that performance standards have in evaluating success. This activity on text structure was just one step down the path that her students would journey during the year.

Once her students demonstrated understanding of beginning, middle, and end as a simple text structure for narrative text, Ilse moved to informational text. She spent a lot of time reading different examples of informational texts, focusing on concept books that had clear text structures. She wanted students to add the role of supporting ideas to their understanding of simple text structure as a tool used by authors to convey meaning. She moved back and forth throughout the year between narrative and informational text, each time adding complexity to the text structures and features that her students explored.

A key feature in Ilse's practice was the seamlessness among instruction, assessment, and curriculum goals. She continually wove them together,

blurring distinctions between instructional activities and assessment tasks. In a written reflection she said, " Having worked in my district in both the ELA [English language arts] and the science standards and trying to put them into practice in the classroom, I became acutely aware that neither instruction, the standards, or assessment stood alone. They were forever locked in a flowing web that surrounded student learning." She believed that assessment should inform not only her practice, but it should inform her students about their learning and their growing understanding of the standards and benchmarks. Her students were partners in assessing. From the beginning of the year to the last day of class, she engaged students in conversations about performance standards—shared criteria that furthered their understanding as well as helped them to evaluate their progress. By the end of the year she and her students had developed shared standards—a shared discourse for talking about authors' use of text structure and genre to convey meaning.

Assessment was a major consideration in Ilse's systematic planning process. She described her process thus:

> When I plan I think about the student learning. That's in my center. And really, I think about the curriculum, which is my standards, and then I think about my instructional piece and I think about assessment. And I'm constantly moving back and forth, so midstream I may change what I'm doing if on the moment I assess that this is not what they need. We're not there yet. I have to scaffold. I have to back up but I'm constantly thinking: and I look at my standards, I look at the benchmarks, I think of my instructional piece. I think of the assessments ... it's not a linear piece. It's more dynamic than that.

The careful embedding of assessment in her instructional episodes provided feedback about instruction as well as student learning and progress. Throughout the year as Ilse guided her students' exploration of genre and craft, she methodically merged assessment with ongoing instruction. She wove the genre and craft benchmarks into her literacy curriculum. For example, she incorporated them into guided reading activities, independent reading, writing workshop, shared reading, and read-aloud lessons. Students kept reading logs and identified the genre of the books they had read by using a color-coded chart that the class had developed. Students also identified the genre of books that they brought to the Reader's Chair. This information helped Ilse evaluate her students' growing understanding of text features and genre.

Near the end of the second semester, Ilse presented her students with a performance task that would challenge them to use what they had learned about text structure. She asked students to organize the 450 trade books in their classroom library.

> We had a classroom library that I had organized by authors' last names. And they just weren't putting the books back. They just weren't utilizing it the way they should. So I had a class meeting. I said, "We aren't using the classroom library. What's the problem?" I said, "How would you organize it?" So they said, "Information and story."

Before sorting began, she asked students to write down the features of information books and stories that they would use to sort the library books. One student listed characteristics such as captions, sequence, headings, sidebars, and labelings under the heading of information. She listed characters, backgrounds, and beginning, middle, and end under the heading of story (see Figure 5.2).

As students worked on categorizing the classroom library, they quickly discovered that they found books that did not fit either category. They put those books in a third pile called "Don't Know." Ilse called the students together to discuss what to do about the Don't Know pile. Students decided that the books might be sorted into poetry, songs and rhyme books, 1-2-3 books (counting books), A-B-C books, and information books

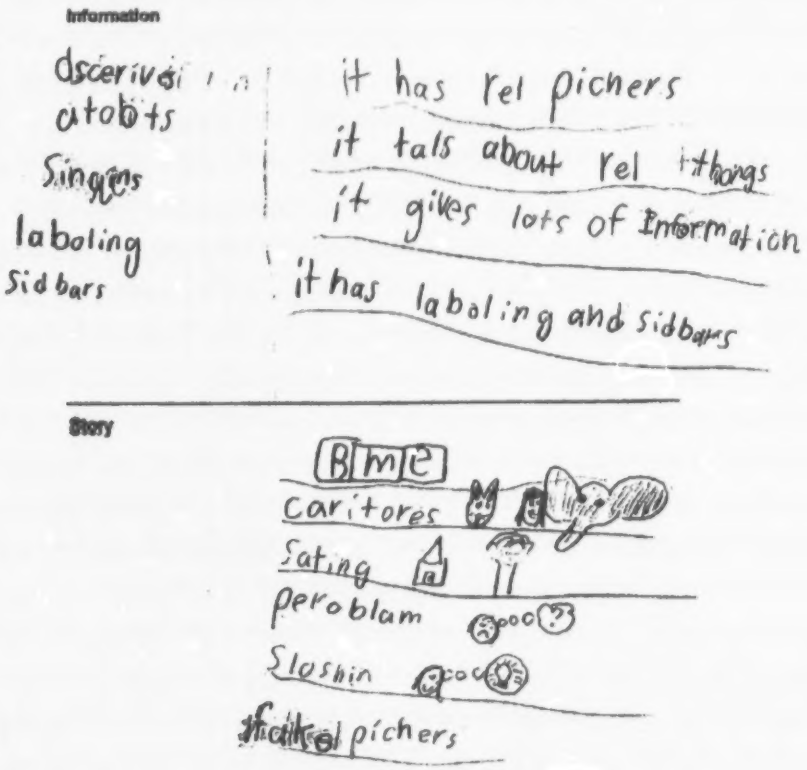

Figure 5.2. Sorting example.

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told like a story. Three weeks later, Ilse pulled the students together again to discuss how to poll the class about how well the new library was working. One group of students suggested that they have a survey asking, "Do you think it is more helpful organized the new way? Yes or No?" She posted a piece of chart paper with the question, and students came up to post their vote. The results were unanimous. The class agreed it was easier to find "a certain kind" of book in the new organization. This performance task illustrates the way Ilse used a variety of ongoing assessment tasks to obtain feedback about her students' understanding of the standards and benchmarks.

Ilse's systematic alignment of instruction and assessment reflects how she feels about the role of standards and benchmarks. For her, effective teaching and learning involve having the big picture of where you want to take your class and what it should look like in the end. "The benchmarks and standards, working them, whether they're the Michigan standards or your own district standards, give you the road map for bringing students there, which is important if you are going to align and finally get them to the end place where we want them." Through systematic selection of learning episodes and scaffolding done throughout the year, Ilse helps her students successfully achieve complex learning goals. She extends the value of implementing the standards to herself and her colleagues. By providing them with an opportunity to design standards-based instruction and to engage in conversations about student work, implementation has helped her and her colleagues raise their expectations. She described the process as one in which they "move the bar a little higher and then move on."

Natalie

At the beginning of the project, Natalie had 17 years' teaching experience, was teaching in a K–1 multiage program in a large urban district, and occasionally team-taught with a colleague who also participated in the Exemplars project. Natalie is an example of a teacher who had some familiarity with standards, but it was not a deep understanding. She had worked in her district on curriculum committees exploring the standards but had not yet had an opportunity to incorporate them into her practice. During the first year that she implemented the standards, she addressed issues related to translating them into grade-level appropriate expectations of student performance, selecting materials, designing instructional episodes, and finding evidence to evaluate her students' achievement of the standards. Her students' developmental level was central to her planning and thinking about instruction. The standards gave her a destination, but because she was concerned about whether her students could do the level of abstract thinking inherent in the standards and whether she could pro-

vide the kind of instructional support they would need, she was unsure of her route. In previous instruction, she had not used literature in the way the standards described, and she was not sure her students could grasp abstract themes or had the language to talk about them. During an early interview she said, "I remember feeling somewhat lost in terms of how to teach the notion of 'key ideas' to 5- and 6-year-olds. I was jumping into the unknown as to how to do this and what resources to use." Her experience with the standards might be described as a "learning as you go" process.

One of her first decisions was about which standard to use. She selected the standards related to literature and depth of understanding as her focus for the year. As she set about thinking about how she might implement the standards, she struggled with what the language of the standards actually meant for her young students. During discussions with other teachers and consultants in the project, she frequently asked for clarification and more concrete definitions of the terminology. Her understanding of the standards evolved slowly over the course of the whole project. If she found that the standard was "pretty nebulous," she discussed it with her team teacher, or she brought it up at the monthly meetings. She said, "for me to learn what the standards and benchmarks for kindergarten and first grade are, it took a lot of talk with a lot of colleagues, a lot of pulling it apart and defining of the terms." She continually refined her conceptualizations of the standards and their application to kindergarten and first grade.

She had uncertainties about the instructional process that would be needed to help her students reach the standards and misgivings about the degree to which her students would be able to think in these complex ways. She knew that assessment of student work would be a key tool as she began this journey, because feedback from assessment tasks would help her in the design of the instructional scaffolds that her young students would need. The process for Natalie was a process of continuous reflection and revision over the course of the school year. It was a recursive process that evolved from her reflection on student learning in relation to her understanding of the standards.

She had a starting point, but she knew that her journey would be one of discovery; her plan would be created as she went along in response to her students' thinking and learning. She had carefully selected a trade book that she believed could be a tool for teaching students to identify and understand key concepts. She took an unusually long time, 6 days, to read and discuss *Pink and Say* (Polacco, 1994). She and the children talked about a few pages at a time. She encouraged them to link the content to their personal experiences and responded to their questions as a way to develop vocabulary and concepts specific to the text. At the end of the story, she asked them to describe what they thought the story was about by drawing pictures and talking or writing about the pictures. Her first

attempt to elicit a response to the key ideas was unsuccessful in reaching the standard. However, she used her students' responses to help her to define the kinds of instructional changes that would be needed. She determined that the children needed a framework and the language to connect the story to abstract themes. She brought the book out again, but this time she asked the children to talk about the life skills they had studied as they looked at the pictures. From their responses this time, she saw that the life skills could be a valuable tool to develop the vocabulary and concepts that would be needed to discuss and to understand key ideas in texts. In a subsequent lesson, she encouraged the children to use the language of the life skills by constructing a concept map. In the center she wrote, "Key Ideas from *Pink and Say*," and the children contributed "fighting for freedom," "death," "friendship," "war," and "pain." They then connected the key ideas to the concept of friendship and to the life skills of caring, truthfulness, and problem solving.

She reported the children were mesmerized by *Pink and Say* and wanted her to read it over and over again as the year progressed. The book anchored the children's understanding and thinking about key ideas, and she used it as a frame of reference when they read and discussed other trade books throughout the year such as *The Rough-Face Girl* (Martin & Shannon, 1992), *Tikki Tikki Tembo* (Mosel & Lent, 1968), *Seven Blind Mice* (Young, 1992), *The Hat* (Brett, 1997), and *Frog Went A-Courtin'* (Langstaff & Rojankovsky, 1955). For subsequent readings, Natalie kept anecdotal records of the children's responses. At the end of the year, Natalie wanted to see if in addition to identifying "key ideas within texts," her children could engage in more complex thinking by making connections across texts. After rereading the trade books, Natalie took the book jackets, made multiple copies of them, and showed them to the children. She mixed them up and covered the surface of a large round table with the book covers. She also showed them the life skills on individual cards. Next, she laid a long piece of butcher paper on the floor and asked the children to help her remember the key ideas they had discussed during the year. She moved along the butcher paper, writing one key idea every couple of feet. Then she asked the children to go to the table, select a cover, pick up a life skill, and match them on the butcher sheet with a key idea that they remembered from the book. When the students made a selection, she asked them to tell her why they selected that particular key idea or life skill. She recorded their responses along with their name on the back of the cover. The children then placed their covers under the appropriate key ideas. After everyone had finished, they talked about how some of the books had more than one key idea, and they talked about how some of the books had the same key idea.

Natalie's approach was to use the standards as a goal, the end destination for her students' journey during the school year. She used assessment practices to gather information about how to move her students further along the route to the expected destination, but she struggled with how to go about it. Near the end of the project she reflected, "I really battled with how to document key ideas and themes with 5-year-olds all year." She was concerned about maintaining continuity between assessment and instruction so that it would be as seamless as possible and provide the direction and scaffolds required for continued learning. She talked about the need for authentic assessment that grows out of classroom instruction and represents situations that are real for her young students. It should not feel contrived. For instance, during discussions on books, Natalie drew concept maps illustrating the students' suggestions of key ideas and identified individual student contributions by labeling ideas with their initials. She kept these as evidence of student performance (see Figure 5.3). She also emphasized the role of assessment in letting her know if her students have reached the standards. At the end of the year she said, "I have more sophistication in my own understanding of how assessment works in driving teaching practices." For Natalie, the alignment of standards, instruction and assessment was a learning journey for her as well as her students. The standards identified the destination, but the assessment piece acted as a compass to guide her instruction.

Heather

At the time of the Exemplars project, Heather was a third-grade teacher with 5 years' teaching experience working in a very small rural district. She had a passion for teaching writing and structured her classroom around a writing-workshop model. She had participated in curriculum projects at both the school level and district level. She served as the third-grade representative on her district's language-arts, math, and technology curriculum committees in addition to serving on her building's school-improvement team. While Heather's district had begun to address the role of standards in curriculum, the district had not yet formally adopted the state's English language-arts standards. Reflecting about the first meeting of the project, Heather said that while other project members were introducing themselves, she was thinking, "Everyone was extremely confident, and had worked on lots of projects. I, on the other hand, was not very confident, and this was my first real exposure to the benchmarks. Our district told us they were there but did not go into the benchmarks for all subjects."

For Heather, the journey of implementing the standards and benchmarks was a solo journey. She represented someone faced with the task of

90

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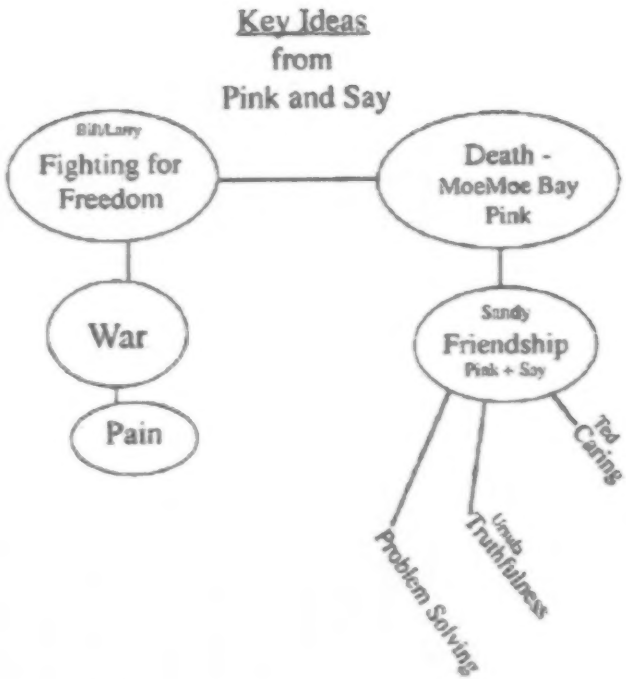
September Discussion Chart



May Discussion Chart

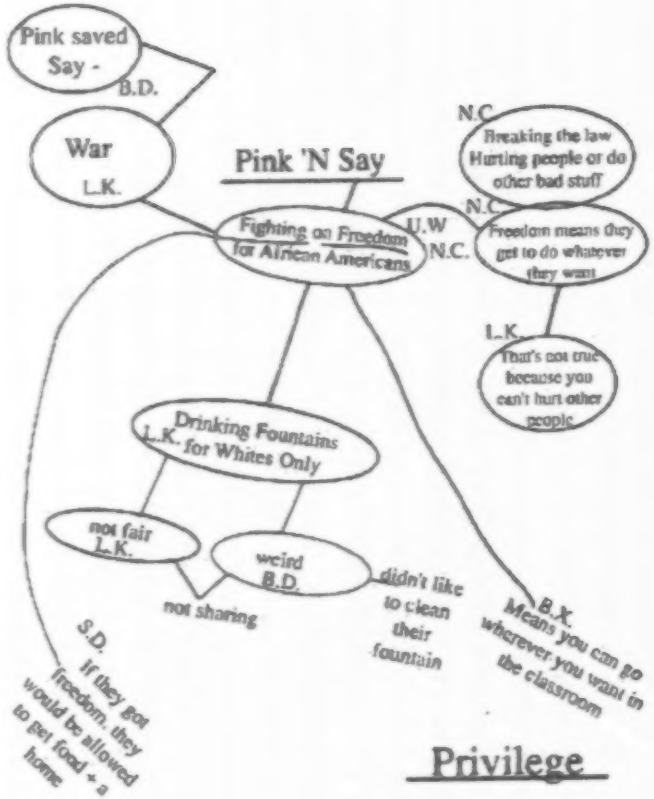

Pink saved Say -
B.D.
War
L.K.
Pink 'N Say
N.C.
Breaking the law Hurting people or do other bad stuff
Fighting on Freedom for African Americans
U.W
N.C.
N.C.
Freedom means they get to do whatever they want
L.K.
That's not true because you can't hurt other people
Drinking Fountains L.K. for Whites Only
not fair L.K.
weird B.D.
not sharing
didn't like to clean their fountain
B.K.
Means you can go wherever you want in the classroom
S.D.
If they got freedom, they would be allowed to get food + a home
Privilege

Figure 5.3. Key-idea discussion charts.

implementing standards on her own. Although she fully participated in the project meetings and benefited from the synergism of focused discussions on the meaning and implementation of the standards and benchmarks, she had no one to collaborate with at the building or district level. She did not have the added learning opportunity of leaving the meetings and rehashing the ideas with someone who shared in the teaching challenges that accompany implementation of the standards. It was up to her to find her own way and to do it in a manner that would make sense to her and her students.

Heather's plan for implementing the standards and benchmarks built upon the strong instructional format that was already in place in her classroom, her writing and reading workshop. She used information she was learning about the standards and benchmarks to "tweak" this existing framework and to add content related to the writing benchmarks and her social-studies content standards. Her approach to implementing the standards was to start with a self-analysis of her existing curriculum. "I would reflect on what we did and look into what benchmarks that it covered. I wanted to have my teaching fit the benchmarks, and use the benchmarks as my guide for areas I need to address more as opposed to looking at each benchmark and getting an activity for each. I wanted to look at the benchmarks as a whole document rather than a checklist or a to-do list."

Heather decided to focus on the genre and craft standard and on the benchmarks that address understanding text features. She chose to begin with characterization, her starting point in previous years during reading and writing workshop programs. She again introduced the concept of characterization with a book titled *The BFG* (Dahl, 1998), but this time she decided to link characterization to concepts that her students were studying as part of the social-studies curriculum. After reading the first few chapters of *The BFG*, Heather introduced the concept of characterization by asking her students to discuss the main character, a giant, in terms of what he looked like and what he did. Then she reminded the students of concepts that they were studying in social studies, including respect, responsibility, caring, trust, friendliness, and good citizenship. She related these concepts to character traits and asked students to think about the giant in relationship to these traits. As a prewriting activity, the students were asked to draw a picture illustrating the giant and to write a statement about one of his traits supported by evidence from the story. She expanded the discussion to include examples of similar traits the students observed in themselves and in their behavior toward one another in the classroom.

By February, Heather had her students using their knowledge of character traits to help them expand characterization in their own writing. Building on their experience in creating character maps, she had them develop a map for the main characters in the stories they were writing. She noted

that their writing and understanding of character improved as the year progressed. In a reflection, she wrote, "In previous years students have always had trouble identifying character traits. It was a list of words they knew. I don't think they truly understood them. This year students had to identify these character traits in themselves, other classmates, and characters we encountered through our reading. Students used these words regularly in their daily communication with people. I had several parents comment on how their child was using words like integrity, perseverance, and responsibility at home. They were telling their siblings that they were not showing patience or cooperation." Heather used the deep level of knowledge that her students developed throughout the year to address more complex tasks with characterization, not only in language arts but also in social studies.

Heather collected work samples of students' character maps at the beginning of the year and the end of the year as a part of the documentation for the project. When she had time to reflect on these samples during a summer meeting of the project, she said, "The documentation helped me see how much the kids integrated the language of the life skills. And if you look at the BFG and you look at the Harriet Tubman character maps, you see a big difference ... my kids were much better at identifying character traits than they ever have been...." She saw growth in her students' use of detail and in their ability to draw inferences and to support their generalizations using specific references to text, as shown in Figure 5.4.

Although Heather says she struggled with the documentation of the standards in the beginning of the project, in her final interview she talked about the usefulness of looking at individual student work in relation to the standards. She noted that looking at the documentation "directs you to do different things." She said that she plans to use the documentation process used in the project throughout the next year to help her make informed instructional decisions. She will use it as a guide "for more individualized instruction." She said that the documentation process helped her realize what to do next with individual students: "when you look at the next steps, some of my next steps were how to push them [students] harder because they did so well on this, and some of it was remediation." The standards began to come into focus and take on clearer meaning for Heather at the end of the project, when she had an opportunity to reflect on the student evidence. She stated, "These benchmarks are the guide for us to see where our students need to be so they can achieve greatness at the next level. I see them as guardrails that are keeping us on the right track rather than little recipe cards that must be followed exactly the same each time to avoid disaster." The benchmarks provide focus and lead to consistency. She said, "With the benchmarks as a focus, you know what your students need to achieve and what you have to do and what you have to get done."

Teacher: Heather
Date: March 1999
Grade: 3

Standards and Benchmarks
Genre and Craft
Identify and use aspects of the craft of speaker, writer, and illustrator to formulate and express their ideas artistically. Examples include dialogue, characterization, conflict, organization, diction, color, and shape.

Focus/Goals
Characterization: after reading a text, be able to apply their knowledge about the character.

Features
Identifies feelings, behaviors, personality traits and can describe the character.

James * Analysis	Amanda* Analysis
James accurately states that Harriet felt sad. He does not finish his thought about why, but certainly John Tubman made Harriet feel very sad. In October, he listed a personality trait under feelings. Much more detail was included in his description of Harriet than of the BFG. James identified that she did free the slaves, and he said she was honest. Identified Harriet as being brave, and in his example he states an event from the story and even said she crossed the Mason and Dixon line, not just that she became free. Spelling is improving. I can read more of his words more easily. Most of the sounds he is using in his invented spellings make sense now, where before he would write any sounds down.	Identifies sad and hurt as feelings. She also says she had feelings for other slaves because she was one. Great inferencing here. It never mentioned that Harriet empathized with the slaves, but that is the idea Amanda is conveying here. She also listed a personality trait under feelings last time, so this shows growth. Puts Harriet's description in list form, and it is accurate. Listed two behaviors and gave evidence of her being "sneaky." Great personality trait of loyal, and she gives a reason why she considers her to be loyal. Amanda listed a behavior under personality trait last time.

* *Note.* Data represent work of students representing varying ability.

Figure 5.4. Student work analysis sheet.

WHAT WE LEARNED

Despite common meetings and the development of shared definitions of standards language, the ways in which teachers used standards in the design of instruction and in assessing student learning varied. The variations appeared to be related both to the teachers' experience with standards-based practice and to the environments in which the teachers worked. Factors such as having colleagues in their district who also participated in the project, the district's commitment to ongoing professional development focused on standards-based reform, and the teacher's previous experience working with standards and curriculum design appear to be related to the processes by which teachers explored the use of standards in their practice. In other words, the black box of teaching and learning interacts with the multilayered environments in which it resides to shape the ways teachers implement standards and how they use student work to guide their developing understanding of the standards.

The context in which Ilse worked provided additional support for exploring the standards. Ilse benefited from working in an environment that supported her professional growth through ongoing, strategic planning and opportunities for teachers to participate in study groups/committees focused on curriculum alignment and student achievement. She worked within a community of practitioners who were focused on similar goals and shared similar levels of expertise in standards implementation. Ilse had a strong support system at both the district level and among her colleagues, which enabled her to address standards in complex ways and integrate them into a well-defined instructional program.

Natalie worked in a district that also was committed to standards-based reform; however, the district was just getting started in designing curriculum related to the standards. Because Natalie had a colleague working on the project, she and her teaching partner were able to confer and to explore together the implications of standards in their multiage program. The context in which Natalie worked enabled her to explore the standards in depth and experiment with instructional practices that increased her appreciation of the role of standards and what they meant for the learning of her young students.

Heather's context was strikingly different from the others. Her district was in the process of examining the standards but had not yet made a formal adoption of the English language-arts standards. During the project Heather received very little direction from the district about curriculum goals and program alignment. In addition, Heather was the least experienced teacher participating in Exemplars and the only person from her district involved in the project, and she did not have anyone in her building she could depend on for collegial conversations regarding standards.

She seemed to be alone in her attempts to integrate standards into her classroom curriculum, which created greater challenges than the other teachers faced. The pace with which she developed an understanding of the standards and their role in instruction was slowed by not having onsite conversations with colleagues and the guidance of a district plan for implementing the standards. Implementing the standards was more problematic for Heather as she searched for meaningful ways to incorporate them into her existing practice.

The nested context in which the teachers worked on a daily basis influenced their understanding of what standards meant for their practice and influenced the process they used to put them into practice. "Standards as a road map" became a common metaphor for the teachers involved in the project. Although the teachers adhered to a common metaphor, the ways in which they perceived that standards function as a road map varied. Ilse, for instance, described the standards as the destination on a road map. She began her instructional planning by clearly establishing the end point (the standard) and the evidence needed to determine student success. She then systematically and methodically planned the instructional episodes needed to prepare all of her students to successfully demonstrate the skills and knowledge described in the standard. Through ongoing assessment, she monitored her students' progress and adjusted the journey by designing scaffolded instruction that supported her students and allowed them to reach the destination successfully.

Natalie also perceived the standards as a destination, but she did not have a clear and fixed route. Because of the challenges of addressing the standards with very young children, she felt she had to create the road as she and her students journeyed together toward their destination. She moved slowly with detours when necessary. Using feedback from her students, she decided when to linger and reinforce learning, and when to move forward and how to make the next steps.

For Heather, the map was less clear in relation to her own practice, but she perceived the role of the standards as providing guardrails for keeping her on the right track as she moved through the curriculum. Her process was to look at where she was in relationship to where she wanted to go. She used the standards to validate her existing curriculum, making refinements as needed. However, she did not perceive the standards as a destination. Her destination appeared to be quality student work according to her perception of where her students needed to be at the end of the year. Thus for the teachers in this study, "standards as a road map" was an apt metaphor, but one that needed a personalized interpretation in order to accommodate the ways in which they applied standards in their practice.

Analysis of student work also played an important role in the teachers' implementation of the standards. Examination of student work helped the

teachers define the content of the standards and the expectations for performance at their grade level. It also provided feedback for making instructional decisions. One of the frequently asked questions "Was what does this standard look like at my grade level?" Through examination of student work, teachers first began to develop a concrete understanding of the standards, and then over time an in-depth understanding emerged. For instance, Natalie used student work to explore if and how well kindergarten and first-grade students could identify and respond to key ideas. She used student work and her evaluation of the quality of their work as a compass to guide instruction.

Ilse and her colleagues met to compare student work and to talk about the attributes that students seemed to have control over and those that needed reinforcement. In the beginning, Ilse was concerned about her students being able to identify various genre features, and she evaluated student work on the basis of how well students were able to incorporate these features into their writing. But over time, she moved her focus to having students demonstrate their knowledge of how authors use genre features to convey meaning. Her goal changed from having students simply be able to identify and reproduce a variety of genres to their acquiring the ability to assess how effectively authors used genre features for conveying meaning and to apply this knowledge flexibly to their own writing.

Although Heather used student work for ongoing student evaluation and to inform instruction throughout the project, it was not until the end of the project that she began to use student work as a window to understanding the role of standards in learning. Spending time in the summer looking over samples of student work across the year enabled Heather to focus on individual student work in relation to specific standards. Reflecting on evidence of a student's achievement of one specific standard over the year clarified Heather's understanding of the knowledge and skill incorporated in the standard. It also helped her see ways in which she might help her students the following year by differentiating instruction in relationship to their specific needs.

Looking at student work in relationship to the standards reinforced teachers' high expectations for what their young students were capable of learning. In addressing the standards, the teachers made demands on their students that encouraged complex thinking and engaged the students in complex tasks. The content of the standards influenced the language of the classroom discourse. Language was introduced in the classrooms that enabled students and teachers to converse about issues related to author's craft and about abstract concepts contained in texts. The language served as a scaffold for higher level thinking. Over time, teachers gradually raised the bar for student performance by analyzing the type of support their students needed to demonstrate the knowledge and skills in the standards and by creating learning

experiences that slowly built a framework for success. During project meetings, teachers who once talked about how unrealistic the standards first seemed began proudly to share the accomplishments of their students and comment about how their expectations for their students had increased.

The process of implementing the standards spurred teacher learning. Meeting with teachers from other districts during the project and engaging in intense conversations about teaching and learning challenged the teachers to think in new ways. Providing feedback as teachers described their instructional plans and problem solving when dilemmas occurred enabled teachers to reflect upon their own practice. Teachers examined their practice in relation to what other teachers were doing and in relation to what other students were achieving. They provided support for each other as they dealt with the challenges and ambiguities they encountered along the journey to standards-based practice. The social interaction among participants in the project was the catalyst that pushed and pulled teachers to new levels of understanding and changes in practice.

IMPLICATIONS

The foregoing has implications for how best to promote the use of standards-based practices in early reading instruction. These implications operate both at the teacher/classroom and the district/state levels. At the teacher/classroom level, it is clear that even the best teachers struggle with using standards to improve their reading instruction. As with most expert practices, there appears to be a developmental progression for learning to use standards and student work in an effective manner. To move along a continuum from novice to expert takes time and supports that provide multiple opportunities to learn. However, once on the path, it appears that the use of standards and student work can raise teachers' expectations for all students and increase their attention to aligning curriculum, instruction, and assessment.

Although the evidence suggests that the use of standards and student work can improve early reading instruction, there are still many unanswered questions. For example, what happens when teachers are working with trivial standards? Also, does work with standards without a concomitant focus on documenting student progress yield meaningful improvements in teaching and learning? Furthermore, the evidence presented here raises the question of whether there is some minimal level of knowledge about and experience with standards that is essential before teachers can benefit from learning opportunities such as Exemplars. And if so, what is the best way to introduce teachers to standards-based classroom practice? Finally, even if we are successful at helping individual teachers use standards and assessments to

improve their practice, how does this translate into systemic change within and across grade levels in a particular building or district?

At the district/state level, it is clear that we must provide teachers with long-term professional development, leadership, and opportunities to interact with colleagues if we want them to use standards and classroom assessments to improve teaching and learning. It is likely that occasions for interaction are necessary both at the building and district levels and need to engage teachers in ongoing conversations about their standards-based practices including the documentation of student progress. Evidence from Exemplars and its predecessor MELAF indicates that professional development is likely to be more effective if practitioners are viewed not as "technicians" implementing externally developed policies but, instead, as partners in the construction of standards-based practice (Dutro et al., in press). The evidence also suggests that every opportunity for networking and collaborating with colleagues is likely to make a difference. Indeed, the Exemplars project helped improve the practice of teachers who were already highly skilled and working in supportive district contexts.

Just as with individual teachers, it appears that districts and buildings within districts operate at different levels of readiness for implementing standards-based practices. This fact needs to be recognized by state-level policymakers and enactors as they consider the types of supports needed to help administrators and teachers use standards and assessments to improve teaching and learning. There may well be strategic points in a school system's development for investing resources in professional development. A related implication is that it may be strategically effective to invest resources in districts with a core community of teacher leaders who are willing to share their learning with others, and to invest more heavily in these teachers' professional learning. Although it is clear that standards and assessments have a great deal of potential to improve teaching and learning, it is also clear that we have a long way to go before we are likely to realize this potential fully.

NOTE

1. The order of authorship for this chapter is alphabetical.

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Part II

READING INSTRUCTION AND PRACTICE

CHAPTER 6

IMPROVING READING ACHIEVEMENT THROUGH PROFESSIONAL DEVELOPMENT

Dorothy S. Strickland

When Jeremy Blount, a fourth-grade teacher and graduate student, was asked to characterize his professional-development experiences, his response was, "I would rank most of them right up there with my idea of purgatory—or worse." Unfortunately, Jeremy is not alone. I have heard teachers complain that their district's entire professional-development program consists of one or two inservice days each year. They refer to these as "one-shot" or "drive-by" workshops. Very often, the topics are not the ones they care most about. Even when the topics are relevant and the ideas well presented, there is little or no follow-up. In addition to citing the ineffectiveness of annually scheduled inservice days, teachers say they are frustrated by the lack of sufficient professional development when new materials, technologies, and curriculum initiatives are introduced. Moreover, teachers tell me that these issues are only part of the problem.

Many teachers feel that professional development would be greatly improved if they were more involved in the decision making and planning. They understand that there are many factors to be considered. They simply want some input. If the school district is operating on the basis of a larger vision, it is not evident to them. They do not share in the vision. These concerns are extremely pertinent in the area of literacy instruction, since it is

an area where much of the professional development is targeted and one that is often the focal point of reform.

Unfortunately, the checkered reputation of professional development is both widespread and well deserved. Instead of steady progress based on advances in knowledge and understanding, staff development has been characterized primarily by disorder, conflict, and criticism. Nevertheless, despite the problems of the past, many in the field of literacy education share my view that the current climate of reform offers an ideal time to initiate exemplary professional-development programs and to systematically study them as a means to improve student performance.

This chapter will address several aspects of professional development for successful reading instruction. It will begin by framing the discussion in terms of current reform efforts to introduce performance standards for teachers of reading and for their professional development. This will be followed by a discussion of key issues related to the implementation of successful professional-development programs. Specific strategies for implementing professional-development programs will also be offered.

THE ROLE OF TEACHER PERFORMANCE STANDARDS IN PROFESSIONAL DEVELOPMENT

One of the most significant initiatives designed to improve teacher quality is the effort to strengthen teacher preparation and professional development through the creation of performance standards for teachers and for the professional-development programs that were designed to help them improve (Strickland, 2000). Research indicates that teachers who enter the profession better prepared to teach are more likely to remain in the profession for the long term. "States that want to develop a stable, high-quality teaching force can invest their training resources more wisely by emphasizing program models that prepare effective, career teachers" (Darling-Hammond, 2000). Professional-development programs that link directly to state initiatives have also led to better teaching.

Many states have established statewide professional-development initiatives designed to link to state standards for students. A study of a Vermont initiative, designed to align relevant professional-development opportunities for teachers involved in a state-instituted portfolio assessment, concluded that the initiative resulted in improved teaching (Hirsch, Koppich, & Knapp, 1998). Other examples include professional-development schools, such as the Mayerson Academy in Cincinnati, Ohio, which focuses on effective professional development for new and veteran teachers, and the California Subject Matter Projects, which provide training in content and teaching methods through Saturday workshops, teacher-run leader-

ship academies, newsletters, and summer institutes. Efforts such as these are prompted by systemic reform. Specifically, they reflect the desire to establish an accountability structure that raises standards for preservice and inservice teachers and to link them to the standards already in place for students.

In addition to establishing their own teacher standards, an increasing number of states now require teacher-education institutions to be accredited by the National Council for Accreditation of Teacher Education (NCATE) or some other nationally recognized accrediting agency. Many states now give special incentives to teachers who seek national board certification from the National Board for Professional Teaching Standards (NBPTS). These standards are designed for accomplished teachers.

Some states have put policies and standards in place to influence the design and quality of the ongoing professional development at the local district level. For example, New Jersey established a Professional Teaching Standards Board, which had the responsibility to produce standards for "effective professional development." These standards are meant to support the content standards already developed for students and provide guidance for the state's newly established requirements for ongoing professional development of teachers (New Jersey Department of Education, 1999; the following standards and their subheadings are quoted from this source). Not only do these standards address issues related to the content and implementation of professional development, they give guidelines for its assessment as well. For example, the first standard relates to content: A good local professional-development plan "enhances knowledge of subject content." This standard includes the following subheadings:

- assists educators in acquiring content knowledge within their own discipline(s) and in application(s) to other disciplines,
- enables classroom professionals to help students achieve the New Jersey Core Curriculum Content Standards (CCCS), and
- routinely reviews the alignment of professional-development content with CCCS and with the Frameworks in all disciplines.

The eighth standard relates to the implementation process: a good plan "results from clear coherent strategic planning that is embraced and supported by the district's governing body and by all levels of the school system." Subheadings for this standard include the following aspects of a high-quality plan:

- supports a clearly delineated vision and is aligned with the district and school goals,
- fosters the use of reflection and self-assessment in professional and intellectual growth, and

- allows educators to pursue personal educational opportunities.

In addition to state initiatives, several national, nongovernmental agencies have either set standards for teachers or produced documents that have influenced those who do. Virtually all have been involved in setting standards for teachers responsible for reading instruction. Among them are the International Reading Association (IRA), the National Council of Teachers of English (NCTE), the American Federation of Teachers (AFT), the National Council for Accreditation of Teacher Education (NCATE), the National Board for Professional Teaching Standards (NBPTS), the Interstate New Teachers Assessment and Support Consortium (INTASC), and the Educational Testing Service (ETS), through its widely used PRAXIS exam, designed to assess beginning teachers. Moreover, the National Academy of Education has published a document outlining guidelines for teacher preparation for the teaching of reading (Strickland & Snow, 2002).

It is no surprise that the International Reading Association has a long history of providing direction for setting standards and priorities in the teaching of reading. More recently, organizations such as the American Federation of Teachers have produced position papers and other documents designed to establish or influence standards in reading, for example, *Teaching Reading Is Rocket Science: What Expert Teachers of Reading Should Know and Be Able to Do* (American Federation of Teachers, 2000).

The Interstate New Teachers Assessment and Support Consortium, under the auspices of the Council of Chief State School Officers (CCSSO), is a consortium of 30 states and professional associations that has developed a set of standards based on knowledge of effective learning and teaching and on the student learning standards developed by professional associations such as the National Council of Teachers of English and the International Reading Association (1996).

ISSUES RELATED TO IMPLEMENTING PROFESSIONAL-DEVELOPMENT PROGRAMS

Until recently, when the causes of poor reading achievement were listed, ineffective teaching was rarely listed among them. Indeed, the causes of reading failure are numerous and complex. Nevertheless, it is reasonable to assume that if the instruction provided by the school is ineffective or insufficient, even some otherwise capable learners will have difficulty learning to read. Of course, a few children manage to flourish regardless of the type and quality of instruction they receive in school. Most, however,

become "curriculum casualties," when either the curriculum or its delivery is inappropriate or inadequate.

Reading initiatives are proliferating throughout the nation. The call for "every child a reader by third or fourth grade" can be heard in virtually every state legislature throughout the United States. A major concern is the need to provide professional development for large numbers of teachers who are inadequately prepared to meet today's demands for higher standards in literacy learning.

Several recent research reports have been highly influential in spotlighting the need for professional development of teachers of reading: *Preventing Reading Difficulties in Young Children* (Snow, Burns, & Griffin, 1998); *Learning to Read and Write: Developmentally Appropriate Practices for Young Children* (Neuman, Copple, & Bredekamp, 2000); *Report of the National Reading Panel: Teaching Children to Read* (National Reading Panel, 2000).

Fortunately, the importance of career-long, high-quality professional development has not gone unnoticed. It has become a high priority in the many efforts enlisted to reform schools and improve student achievement in reading. Throughout the country, there is a growing recognition that excellence as a teacher of reading is not attained upon graduation from a teacher-preparation program followed by occasional participation in a district's inservice day activities. Nor is professional development toward excellence something that only happens in graduate coursework. Professional development for the purpose of improving literacy instruction is an ongoing process involving all of the members of a schoolwide literacy team in the ways that will help them become more effective in what they do.

The emphasis on professional development has come relatively late in the current reform movement. This is particularly puzzling, since the neglect of a key role for teachers is often cited as an explanation for why reforms fail (Cohen & Ball, 1990; Darling-Hammond, 1990). Additionally, the history of staff development is haunted by ineffective practices. Sykes (1999) argued that professional development is a largely untested solution that can promote widespread improvement in literacy instruction. Indeed, though much has been learned about what constitutes effective professional development (Loucks-Horsely, 1997), there is little research-based evidence about how to design professional development for continuous improvement in literacy instruction. As practitioners and researchers set out to design professional development, there are a number of issues they must confront. These include the need (a) to convince policy and fiscal decision makers that the time and expense associated with professional development for reading is worthwhile, (b) to consider professional development in terms of the needs and priorities of adults as learners, and (c) to consider, when applicable, the special challenges associated with planning and implementing professional-development efforts in urban contexts.

Making a Case for Professional Development

Advocates frequently overlook the need to persuade a school system or board of education of the value of staff development. Asayesh (1994) stated that "advocacy for staff development takes planning, vision commitment, outreach, and a healthy dose of politicking" (p. 52). Among the suggestions that Asayesh offered is the creation of a long-range plan that integrates the literacy staff-development effort into a school-improvement strategy. This helps others see the relevance of staff development. For example, if a district requires teachers to formulate annual personal goals, they might be encouraged to work toward improvement in literacy instruction. The establishment of a broad-based council to formulate the plan and serve as advisers also helps to get everyone on board. Key stakeholders such as parents, teachers, administrators, union representatives, and community representatives would be included.

Included in the overall plan should be a mechanism for documenting the effectiveness of the staff-development program, showing its impact on staff, students, and the organization as a whole. School-performance indicators, such as standardized tests, as well as classroom-based assessments, such as the administration of running records and miscue analysis, should be used. Testimony from staff, students, and parents should also be included. It is important to address known concerns of the educational community, policymakers, and parents. Knowing the audience is important. For example, if attention to phonics and grammar is an issue in a district, planners should highlight these areas.

Too often, staff development is defined narrowly in terms of workshops for classroom teachers or administrators. Asayesh (1994) suggested that staff development be broadly defined so that it embraces routine activities such as taking part in curriculum-revision task forces or school-improvement teams. This will integrate staff development into the existing structures rather than presenting it as a burdensome add-on. Finally, maintaining a high-quality program is the best way to sell it (Asayesh, p. 52).

Working With Adult Learners

Well, I hope this will be practical. Just in case, I brought along some papers to grade.

I think I've heard all this before. Sounds just like what I'm doing already. So what's new?

Well it wasn't too bad. One or two pretty good ideas. Wish I had time to try them out.

Virtually all individuals approach new learning situations with certain expectations, understandings, and beliefs. Educators are no different. They bring their own preconceived assumptions about what they will learn and how useful it will be to their work. Needless to say, all learners need experiences that are engaging and motivating and that have relevance to them. This would be true whether the learners were children of any age or adults. Nevertheless, there are some characteristics that distinguish adults from younger learners. Friend and Cook (2000) offered some of those characteristics. They are described here with implications for professional development in reading.

Adults bring with them a vast amount of prior knowledge, wide-ranging experience, and a great number of skills. Along with this wealth of information and experience and these well-developed and practiced skills, adults have acquired ideas, beliefs, values, and passions about learning, developed after years of success and perhaps failure during the years they have spent in schools. In the field of reading, teachers tend to have very definite beliefs and opinions about how instruction should proceed.

This suggests that the ideas teachers bring to the professional-development experience about reading instruction must be respected. It is often said that change is a process, not an event. It is likely to take place through gradual shifts in beliefs and practice. This is best facilitated in a context that encourages questioning, assessing, and reexamining the processes of teaching and the beliefs underlying them.

Adults are goal-oriented. They generally have a set of goals or issues they are facing at a particular time, and they want to resolve these problems or issues *now*. Professional development often works best when the theoretical grows out of the practical. Teachers are apt to express their concerns in terms of the day-to-day issues related to instruction. Some of the issues on the minds of teachers today include how best to organize the language-arts block, how best to teach word-study skills to middle-grade students, and how to best prepare students for high-stakes tests in ways that support good teaching and learning. Effective professional development will speak directly to these issues in straightforward, practical terms. At the same time, the theoretical understandings that support the ideas should be addressed. Without these, teachers will be unable to adjust the practical ideas in ways that are consistent with the underlying theories.

Most adults are likely to be flexible learners. They have had to adapt to many different learning contexts, teaching approaches, and teacher personalities. They have high expectations. They know what they want from professional-development sessions and expect to get it. They have worked with many different kinds of children and families and have developed a sense of good or poor learning contexts. Although teachers will generally embrace good ideas about ways to improve reading instruction, they also

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want to know about the support they will be given to follow through. Effective professional-development efforts invite active participation by all involved. Teachers and administrators need to talk with each other about substantive issues and build a sense of community as they work toward common goals.

Adults have many commitments and many demands on their time. It is important that they view the professional development as a wise use of their time. Most teachers are motivated to learn. They realize that they are accountable for their students' learning and are motivated to try new teaching approaches and techniques that will improve their practice. Effective professional development capitalizes on the genuine concern that most teachers have to improve their practice.

Professional Development in Urban Contexts

During the past several decades, the author has spent considerable time working in a variety of professional-development efforts in both suburban and urban school districts. Though the principles and guidelines outlined above generally apply to all situations, they have a special meaning in urban districts, where teachers and administrators are faced with challenges that often constrain their efforts to engage in sustained, high-quality professional development. A key issue to consider when contemplating professional development in urban schools is the tension that comes between those who would focus on issues of cultural diversity as the key component of professional development and those who would focus on general principles of teaching and learning known to be beneficial to all students regardless of their cultural backgrounds.

In her review of research on urban teacher preparation, Weiner (2000) complained that too often those who study teacher thinking in urban contexts regard "urban" as synonymous with "culturally diverse" and thus attribute many of the challenges of working in such communities to their diverse or multicultural makeup. The term "urban" is often used as a euphemism for other politically charged labels, such as "at risk," often associated with explanations for school failure. For some, the focus on diversity tends to foster the belief that it is the only salient aspect of urban education, causing issues related to improving instruction and the educational climate to be pushed aside. There is no doubt that issues related to race and culture are critical and must be addressed. Garcia (1999) has agreed that it is useful to focus on cultural characteristics. However, he suggests that the competing theories be viewed as poles on a continuum with a range of possibilities within. Thus, planners need to balance the content of professional develop-

ment with attention to both the key principles of teaching and learning and the cultural contexts within which they will be applied.

Another factor relevant to planning successful professional-development programs in urban settings relates to the context of teaching and learning. Numerous studies point to the nature of urban school contexts as a highly influential force in determining the type and quality of learning, instruction, and curriculum occurring in urban classrooms. Winfield and Manning (1992) identified many common practices in urban schools that constrained teacher initiative and sense of efficacy, including the existence of separate, uncoordinated instructional programs that encouraged a custodial attitude toward children and curriculum and a belief that teachers were simply referral agents. They have provided evidence that changes in supporting structures are essential to alter existing norms and beliefs of both teachers and students. As with issues related to cultural diversity, the constraints of the working environment must be addressed in professional-development programs along with the current understandings about the teaching and learning of reading. Contextual constraints should not be used as an excuse for not moving forward. But they should be recognized and addressed as a challenge for those involved to work collaboratively toward solutions.

STRATEGIES FOR PROFESSIONAL DEVELOPMENT

Though many models of professional development have emerged over the past years, the reality is that most professional development continues to be delivered through inservice workshops on one or two annual professional-development days. At times, the workshops may consist of a smorgasbord of offerings that may have little to do with teachers' perceptions of what they need. These are one-shot opportunities that are unlikely to hit the mark as genuine professional development. As a first step toward a broader vision of professional development, many school districts have transformed the notion of the annual professional-development day to a series of focused workshops, seminars, or meetings that reflect the interest and needs of a subset of teachers or of a particular school within a district. These workshops are characterized by collaborative planning by teachers and leadership personnel. They are generally based on a cycle of planning for no less than one year at a time. Participants define their learning needs, logistical considerations, and needed support. The activities in which they engage generally reflect small-group inquiry models in which the participants set their own goals and agendas. Outside "experts" may or may not be used. When they are invited, outside experts are selected to address a particular felt need of the group. The goal is to build a learning commu-

nity that shares a common interest and works toward a shared vision for improved instruction. Efforts of this type often make use of other models of professional development, such as faculty study groups and coaching. Both peer coaching and mentor coaching will be discussed here.

Faculty Study Groups

Faculty study groups (Murphy & Lick, 1998; Strickland, Ganske, & Monroe, 2002) may involve the whole faculty, or they may involve faculty at specific grade levels or with similar goals. At times, all new faculty might be involved in a study group during their first year of teaching. Faculty study groups may be used to (a) support curricular and instructional innovations, (b) integrate the school's instructional programs, (c) target a schoolwide instructional need, and (d) monitor the impact of changes on students.

Procedures

1. Groups of six to eight members or less seem to work best. The topic will determine who participates in a given group. Weekly hour-long meetings often work well.
2. Establish norms at the first meeting. Discuss issues such as expected participation, punctuality, respect for others' opinions, and openness to change. A pattern for leadership should also be established. Leaders confirm the time and location of the meeting, complete the log after the meeting, and communicate with members who are not part of the group. Rotating leaders will help maintain equal status among all members.
3. Create a study-group action plan. The plan should include
   - the specific needs that the group will investigate,
   - how student change that results from the work of the study group will be ascertained,
   - the resources the group will use, and
   - training events that include the presentation of the theory that supports a given skill and opportunities to observe and practice with each other in the classroom.
4. Report what happened after each study-group meeting. Recording helps group members confirm why they took a certain action, and it helps them see the progress of group relationships and of their thinking. A report could include
   - date, time, and place;
   - attendance at the meeting;
   - how what participants learned was applied in the classroom;

- a summary of the group's discussions and activities;
- plans for the next meeting; and
- concerns and recommendations.

5. Periodically evaluate the effectiveness of the study group. Use the action plan as a reference for formulating evaluation questions. Evaluate the way the study group is functioning as well as the way the study group is impacting students and the school culture.
6. Establish communication networks. There are various ways that this can be done:
   - Every 4 to 6 weeks, have representatives from each group meet to share and discuss their logs. These meetings, in turn, can be discussed in the study groups.
   - Post the study-group logs so that everyone has access to them.
   - Create newsletters, brochures, and videos describing findings and activities.
   - Hold exhibits. Groups can advertise a time when others can find out what the study group is doing.
   - Create a bulletin board for notes from the study groups.
   - Hold a whole-faculty study-group meeting every 4 to 6 weeks. Invite district leaders.
   - Plan special celebrations.
   - Assign a liaison to other study groups.
   - Tell students what is happening in the study groups.

Considerations for self-assessment

- Are the topics of the study groups substantive and practical so that the focus of the study group is on the content rather than the individuals in the group?
- Do the members freely participate in the discussions and show appreciation for each other's ideas?
- Is the study group effective in implementing the action plan?
- Are any changes seen in the students as a result of the study groups?

Coaching

Many school districts are combining workshops and other forms of professional development with coaching. Coaching has many advantages. It allows for more personalized attention to specific concerns. It fosters opportunities for action, observation, and reflection with a knowledgeable and interested other. Studies have shown that policymakers can support new teachers and reduce attrition through the establishment of induction

programs that provide direct support from a mentor or master teacher (Gold, 1996). Coaching may take many forms. Peer coaches and mentor coaches are among the most frequently used.

Peer coaching (Joyce & Showers, 1995; Showers & Joyce, 1996; Strickland, Ganske, & Monroe 2002) involves coaching teams formed to develop a specific teaching strategy or to find new ways to meet a school goal, such as the integration of new writing strategies in the classroom.

Procedures

The first steps of the coaching process involve skill acquisition through practice, observation, and feedback. Later, as skills develop, coaching sessions are used to examine how best to apply the skills to the classroom context.

1. Study the theory behind a targeted skill or strategy. The theoretical framework can be ascertained through discussions, readings, presentations, or other means.
2. Find a way to observe a demonstration of the strategy. Demonstration can take place by means of a videotape or a live presentation.
3. Practic new skills. Practicing with other teachers helps participants to clarify mistakes, develop skills of peer coaching, and learn from others' ideas and skills. The more similarity the simulated conditions of the practice have with those of the workplace, the better.
4. Provide feedback. Teachers can observe and provide feedback for each other, or they can critique themselves through the use of audiocassette and videotape recordings. Feedback should take place as soon as possible after the training event and should be specific and nonevaluative.
5. Continue follow-up in the coaching process. The teachers continue to meet for collaborative problem solving, joint planning of lessons, and analysis of curriculum materials for the appropriate use of strategies. As needed, the teachers continue to serve as coaches for each other in the classroom.

Variations

Instead of having the teacher who observes be the coach, switch roles so that the observer becomes the learner and the teacher who has been teaching becomes the coach. This approach can be less threatening and can foster collegiality.

Considerations for self-assessment

- Is the feedback given to each other supportive and helpful?

- Are teachers developing greater confidence and mastery over the strategies implemented?
- In addition to learning skills, is the coaching team engaged in solving problems and generating new ideas?

The mentor coach, very often, is a master teacher or key staff developer, who has participated in planning and implementing the staff-development program. That person is then assigned to a group of teachers in order to work more closely with them on a day-to-day basis. By its very nature, coaching provides much-needed time for teachers to apply what they are learning and adjust and readjust it with the guidance of a well-trained facilitator. Lyons and Pinnell (2000) have written extensively about the value of effective coaching as a tool for professional development. They have stressed the importance of a skilled staff developer who creates an environment within which teachers are willing to try new approaches. A specific coaching session with a teacher may involve a demonstration by the staff developer or an observation of the classroom teacher. Conversations before and after the coaching session serve several purposes. Opportunities are provided to analyze and reflect on specific procedures and to refine them on the basis of feedback. Teachers are made more aware of their own decision-making processes and of how those relate to available pedagogical knowledge and understandings.

Lyons and Pinnell (2000) have offered the following principles for effective coaching to staff developers (p. 144):

1. Create a trusting context that provides good dissonance, so that both you and the teacher learn something new.
2. Attempt to understand what the teacher knows at this time, and back that up with evidence.
3. Remember that your job is to connect your own agenda with the teacher's agenda so that both of you can meet your goals.

SUMMARY

Professional development has a vital part to play in current educational reform efforts, particularly in the field of reading. Sufficient research exists to suggest key elements that need to be present if professional development is to be successful in changing teacher behaviors. Still needed is a program of rigorous, long-term research to link professional development to student achievement. Many believe that now is the time for professional development to take a front seat along with standards and assessment as key elements of reform and research. The times have changed. The demand for

high-quality literacy education for all children is, no doubt, here to stay. High-quality, ongoing, professional development will play a major role.

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CHAPTER 7

READING IN DISCIPLINE/ CONTENT MATERIALS

Donna E. Alvermann

Instructional methods aimed at teaching reading in discipline/content materials are distinct from those found in beginning reading instruction. In fact, textbook authors, curriculum planners, college professors, and any number of other interested parties build entire careers around this distinction. An oft-repeated reason for the difference is that students learn to read before they read to learn. However, this is an outdated notion. Separating the act of reading from one of its functions—reading to learn *something*—makes no sense. Developmentally, beginning readers are different from skilled readers, but the difference lies more with the content or subject-matter materials the two read than with their purpose for reading.

In this chapter,[1] I focus on the reading methods and activities that teachers and students use at the intermediate-, middle-, and high-school levels to foster learning in discipline/content materials. In synthesizing what the research and wisdom of practice suggest about these methods and activities, I have divided the chapter into two parts. In the first part, I trace the historical development of content area reading (Alvermann & Hruby, 2001). This is an important first step, because reading in content materials is heavily discipline-based, and the methods and activities associated with teaching reading in such materials are considerably different from those associated with beginning reading instruction. In the second part of the chapter, I connect current research and practice in content area reading to the principles of good teaching presented in Brophy (2001) and draw implications for classroom instruction. Finally, I offer some concluding

thoughts on what we know (and do not know) about reading in discipline/content materials.

HISTORICAL DEVELOPMENT OF CONTENT AREA READING

What is content area reading, or reading in the discipline areas such as social studies, science, English language arts, mathematics, and so on? As a specialty area within literacy education, content area reading traces its roots to the early part of the twentieth century and more specifically to the work of William S. Gray, a psychologist at the University of Chicago (Moore, Readence, & Rickelman, 1983). Beginning with Gray's work (1919) on the relation of studying to reading, a long line of reading educators (e.g., Bond & Bond, 1941; Strang, 1937; Yoakam, 1928) established through their research and writing the reading profession's awareness of the need to teach students at the secondary and college levels how to comprehend and retain the content of their subject-matter textbooks. Such instruction has frequently involved pullout programs designed specifically to remediate students deemed "deficient" in their use of basic reading and writing skills.

In 1970, Harold Herber published the first textbook devoted exclusively to integrated content area reading instruction at the high-school level. In this text he introduced a method for teaching reading, *not* separately by a reading specialist in a pullout program, but rather as a process that classroom teachers could use in guiding their students' comprehension of the subject-matter textbooks they regularly assigned. Since the 1970s, numerous literacy teacher educators have written textbooks on integrating reading and writing with subject-matter instruction at the secondary level. Underlying many of those books, which follow Herber's lead, is this familiar phrase: "content determines process." Briefly, this maxim refers to the fact that implicit in the content of subject-matter texts, which teachers expect students to read, lie the reading skills students need to comprehend the material. By giving content the upper hand over skills, Herber made it clear that he did not equate content-area reading instruction with teaching reading as a separate subject.

More recently, the term content area reading has given way to adolescent literacy. Although there is still a focus on the instructional methods and strategies used in subject-matter classrooms to help students grapple with their assigned readings in discipline materials, the field seems to be redefining itself (Alvermann, Hinchman, Moore, Phelps, & Waff, 1998; Moore, Bean, Birdyshaw, & Rycik, 1999). Adolescent literacy instruction encompasses both the psychological perspectives on reading introduced during the cognitive revolution of a few decades ago and the sociocogni-

tive and sociocultural perspectives that are prevalent today. Current methods texts on adolescent literacy tend to emphasize issues related to technology and teaching in culturally and linguistically diverse classrooms, as well as strategy instruction and the reading process.

Only a few methods texts address the critical literacies outlined by the New London Group (1996). These new literacies are concerned with ways of teaching and learning that go beyond simply mining a textbook for its literal or inferential meaning. No longer willing to think of reading as primarily a psychological phenomenon—one in which individuals who can decode and have the requisite background knowledge for drawing inferences are able to arrive at the "right" interpretation of a text—the New London Group has documented how the "right" interpretation of a text rarely holds for different individuals reading in different contexts. Their work and that of others who are similarly focused on students' critical literacies has become known as the New Literacy Studies (Willinsky, 1990). Despite the field's changing terminology, for the purposes of this chapter, I have chosen to stay with content area reading, because the literature from which I draw in synthesizing the research on instructional methods and learning activities in the disciplines is historically rooted in the practice of teaching reading in the content areas.

PRINCIPLES OF GOOD TEACHING IN DISCIPLINE/ CONTENT MATERIALS

Four methods are common to most, if not all, that goes on in the name of reading in discipline/content materials. These methods include teaching students text comprehension strategies, preteaching content area vocabulary, using text-based discussions to engage students in reflecting on what they have read, and integrating literacy instruction across the curriculum—a method, interestingly enough, that is grounded more in the wisdom of practice than in the research literature per se.

Text Comprehension Strategies

The intended goal of teaching students to use text comprehension strategies is to enable them to become independent readers—the assumption being that a strategy learned is a strategy students will apply on their own. For obvious reasons, this assumption does not always hold up in day-to-day practice. Nonetheless, teaching students strategies for comprehending their textbook assignments is an instructional method that is emphasized in more than 25 published methods texts on content area reading and lit-

erature studies currently in circulation. The rationale for teaching these strategies is tied to the notion that "comprehension is an active process that requires an intentional and thoughtful interaction between the reader and the text" (National Reading Panel, 2000, p. 13). This rationale, coupled with the widespread advocacy in reading methods texts for teaching comprehension strategies, seems well founded in the research literature (Alvermann & Moore, 1991; Bean, 2000; Pearson & Fielding, 1991; Tierney & Cunningham, 1984; Wade & Moje, 2000).

Charged by Congress in 1997 to assess the effectiveness of various instructional methods for teaching students to read, members of the National Reading Panel (2000) identified 205 studies on text comprehension instruction that met the stringent criteria the panel had laid out prior to selecting the studies. In its review of these studies, the panel concluded that the following seven categories of text comprehension instruction have a solid scientific basis for improving students' understanding of what they read in the discipline areas:

- *comprehension monitoring*, where readers learn how to be aware of their understanding of the material;
- *cooperative learning*, where students learn reading strategies together;
- *use of graphic and semantic organizers (including story maps)*, where readers make graphic representations of the material to assist comprehension;
- *question answering*, where readers answer questions posed by the teacher and receive immediate feedback;
- *question generation*, where readers ask themselves questions about various aspects of the story;
- *story structure*, where students are taught to use the structure of the story as a means of helping them recall story content in order to answer questions about what they have read; and
- *summarization*, where readers are taught to integrate ideas and generalize from the text information. (p. 15)

It is not surprising that these same seven categories of effective text comprehension instruction overlap with 5 of the 12 Brophy (2001) principles of good teaching: Principle 5 (coherent content achieved through the use of graphic and semantic organizers, including story maps), Principle 6 (thoughtful discourse in the form of question answering and question generation), Principle 8 (scaffolding students' engagement through comprehension monitoring), Principle 9 (strategy teaching in which teachers model and provide explicit instruction in general study skills such as summarization), and Principle 10 (cooperative learning with opportunities for students to work together in pairs or small groups on authentic comprehension tasks).

Although the seven categories of text comprehension instruction identified by the National Reading Panel are thought to improve students' reading, they tell us little if anything about the contexts in which such instruction occurs. Studies that take into account the situation-specific aspects of reading in discipline/content materials can be found in the qualitative research literature (e.g., Bean, 2000; Ivey, 1999; Moje & O'Brien; 2000; Moore, 1996), a body of literature excluded from consideration by the National Reading Panel because it did not meet the experimental and quasi-experimental design criteria that the panel had specified as evidence of highly rigorous research. Some examples of this qualitative research on text comprehension instruction are included next.

In his review of the literature on the contexts of literacy instruction, Moore (1996) showed how the joint actions of teachers and learners create contexts for effective text comprehension instruction. For example, Mr. Ruhl, a high-school biology teacher in a qualitative cross-case analysis by Dillon, O'Brien, Moje, and Stewart (1994), used his understanding of science and his goals as a teacher to co-construct with his students a learning context in which text comprehension played a major role. In summarizing this study, Moore concentrated on a particular comprehension strategy known in reading circles as the study guide:

> Mr. Ruhl believed there were sets of science-related information that all informed citizens needed to know. Along with grasping basic scientific knowledge, students needed to understand how science affected their lives and how informed decisions could be based on this understanding. Mr. Ruhl also believed in the personal value of each individual. He saw his role as a biology teacher to facilitate each student's acquisition of domains of knowledge. He believed that mastery learning systems provided the opportunity for every student to learn successfully.
>
> Mr. Ruhl produced study guides for students to complete. The guides contained learning objectives, key vocabulary, directions for reading and responding to print materials, diagrams that clarified difficult concepts, and page number references to designated information. These guides were meant to mediate reading difficulties and focus students on important concepts. Students worked on the guides daily in cooperative groups, reading, writing, discussing, and consulting with their teacher. (p. 29)

In another qualitative study of a high-school biology teacher, Thomas (1999) focused almost exclusively on how the teacher and students socially constructed a classroom learning environment in which students' voices became part of both process and content. According to Thomas,

> Student voices were heard in relation both to classroom process and scientific content. Students gave the teacher feedback about ways the classroom

process could be most helpful to their learning. Students asked content questions to clarify confusion and find links to prior knowledge and experiences. Students used talk as a tool for modifying knowledge in light of new ideas and experiences. In addition, many teacher questions went beyond low-level factual questions and were designed to encourage students to think through their answers.

The extended use of cooperative learning groups in this class promoted student-to-student talk, some involving "talking science" (Lemke, 1990)—using scientific vocabulary, assisting each other in finding scientific information or understanding procedures for scientific labs, and formulating and trying out scientific questions and hypotheses. Cooperative learning groups also allowed most students to find their own best method for learning, whether that meant working in groups, working alone, or sharing answers after completing work. (p. 326)

Preteaching Content Area Vocabulary

The importance of vocabulary knowledge to subject-matter reading has been recognized since the 1920s (Whipple, 1925). Along with this recognition has come the generally accepted belief in the need for both direct and indirect instruction in content area vocabulary (Herber, 1970, 1978). The rationale for such instruction is that school reading materials often present many unfamiliar words that, if left untaught, will cause students to experience difficulty in comprehending the materials. Or, if familiar, the words may carry special meanings (e.g., one might encounter a water table in a geography text, a periodic table in a chemistry text, and a multiplication table in a math text). In an effort to determine the best approach for teaching vocabulary, the National Reading Panel (2000) evaluated 50 studies that met their design criteria. Within those 50, the panel identified 21 different approaches. Because of the relatively large number of variables represented in the small number of studies evaluated, the panel could not conduct a formal meta-analysis of the results of these studies. Therefore, the information presented here represents what the panel called trends across studies.

Specifically, the National Reading Panel (2000) reported that preteaching vocabulary found in discipline/content materials leads to improved text comprehension, with computer-assisted instruction edging out traditional methods of instruction in a few cases. Although students' vocabulary knowledge can be enhanced incidentally through reading or listening to others read, the panel's findings suggest that teachers will find it advantageous to structure tasks and learning activities so that students receive multiple exposures to the same word but in different contexts. In addition, there was some evidence to suggest that teachers should consider substitut-

ing easy words for more difficult words when planning learning activities that involve low-achieving students.

Although the panel's findings on preteaching vocabulary support the Brophy (2001) fourth principle of good teaching—establishing learning orientations—they do not spell out what such instruction might look like in real classrooms. To get a picture of this instruction, it is helpful to consider the findings from a study Harmon (1998) conducted in which she collected verbal protocols (think-alouds) for 6 months from four middle-grade students enrolled in a large suburban district with a predominantly English- and Spanish-speaking population. The four readers (two average, one proficient, and one struggling reader) read silently from self-selected texts. When they came to an unfamiliar word, Harmon asked them to talk about how they would figure out its meaning. She offered general probes, such as "What makes you say that?" and "Please tell me more." For example, in the following transcript from a think-aloud involving the word *ornate* from a passage in *Roll of Thunder, Hear My Cry* (Taylor, 1976), Harmon asked Lynette, a proficient reader, to explain why she initially thought the word meant "delicate." The passage appears first, followed by the think-aloud:

> The furniture, a mixture of Logan-crafted walnut and oak, included a walnut bed whose ornate headboard rose halfway up the wall toward the high ceiling, a grand chiffonier with a floor-length mirror, a large rolltop desk which had once been Grandpa's but now belonged to Mama, and the four oak chairs, two of them rockers, which Grandpa had made for big Ma as a wedding present. (p. 36)

Lynette: The girl was explaining her parents' bedroom and ... she's saying it "included a walnut bed whose ornate..." that's the word "...headboard." Maybe it's like a type of wood or ... but they've already explained the wood so maybe it's like ... OK ... it says "the headboard rose halfway up the wall toward the high ceiling...." Maybe like ... delicate ...

Researcher: What makes you think of delicate?

Lynette: I don't know. It's like made out of wood and it's pretty old. And like ... maybe crafted because it's like when things are made out of wood that somebody like had to make it so like it's a craft. I don't think it has anything to do with size because then she [author] goes on to explain the size. So I don't think ... she'd [author] do that twice.

Researcher: So right now you would say "crafted" or "delicate."

Lynette: Yeah or like ... detailed maybe.

Researcher: What made you say detailed?

Lynette: Well, like on some headboards there's all these designs on it. Like wood headboards at furniture stores or whatever. So it's like maybe it's very detailed with ... um ... I don't know just the

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> wood is like cut out to be, you know, detailed and stuff. (pp. 566–567; all ellipsis points and bracketed interpolations in Harmon)

Among Harmon's many findings, three in particular stand out. First, regardless of reader type, all four students used similar strategies to construct meanings of unfamiliar words. These strategies included the use of context clues, structural or word-level analysis, and outside help (e.g., asking someone or going to the dictionary) to determine a word's meaning. Second, whether or not they were able to generate accurate meanings for unfamiliar words, all students used multiple strategies during single encounters with a word, and they accepted the definitions they worked out for themselves. Third, all students indicated they believed that learning new words was critical to becoming a good reader, and all but one (the struggling reader) used contextual analysis as an initial strategy for unlocking meaning.

In addition to collecting the think-aloud protocols, Harmon (1998) interviewed the students individually on several occasions and met with the students' seventh-grade teacher to learn more about the teacher's approach to vocabulary instruction. Her analysis of the interview data revealed that there was general agreement among the four focal students that "teachers help them learn new vocabulary by highlighting and talking about [the words] before a reading assignment" (pp. 588–589). They also agreed that during sustained silent reading periods, it was inappropriate to seek outside help when they did not understand a word.

Using Text-Based Discussions

Teachers have several goals in mind when planning for text-based discussions. One such goal is to enrich and refine students' understandings of what they have read. Another goal is to guide students' higher order thinking abilities. Without discussions that take students to increasingly higher levels of understanding of the ideas presented in texts, it is likely that many readers would remain at the literal level—that is, recalling and regurgitating facts. Yet another goal of text-based discussions is to provide opportunities for students who do not speak English as their first language to hear ideas explained by their peers rather than only through the language of their teachers. The rationale for class discussion is based largely on the work of Vygotsky (1935/1978), who believed that "mental functioning in the individual originates in social, communicative processes" (Wertsch, 1991, p. 13). In other words, a Vygotskian perspective on discussion assumes that students will not learn from their textbooks alone, but rather

that they will benefit from having someone more knowledgeable than themselves guide their learning.

In the past two decades, the field of reading education has awakened to the facilitative effect of text-based classroom discussions on students' understanding of subject-matter material. This awakening was sparked, in part, by the work of Bridges (1979) and Dillon (1988, 1994). Contrasting discussion with the more traditional recitation pattern of classroom interaction in which the teacher asks a question, the student answers, and the teacher evaluates the student's response, Bridges noted that ideally discussions are give-and-take exchanges between teachers and students for the express purpose of enriching and refining students' understanding of subject-matter material. Dillon wrote prolifically on the topic of classroom discussion and included practical suggestions for engaging students in informal dialogue.

Although no large-scale analyses have been conducted to determine the effectiveness of text-based classroom discussions on students' subject-matter learning, there are any number of smaller studies in the sociolinguistic literature that look at the effects of classroom oral language on reading and writing (for an overview of these studies, see Wilkinson & Silliman, 2000). Most of the early 1970s sociolinguistic research on classroom language was conducted for the purpose of analyzing the communicative competence of young children and the complex demands of classroom communications involving both teachers and students at the elementary level. Although this research was informative and led to speculations about the nature of classroom discussions in the upper grades, by and large the early descriptive studies were limited in what they had to say about text-based classroom discussions, especially in subject-matter areas.

Nonetheless, the assumptions that came out of this early work in sociolinguistics did provide a starting point for the work with older populations of students. For example, researchers interested in content area reading at the middle- and high-school levels (Alvermann & Hayes, 1989; Alvermann et al., 1996; Dillon & Moje, 1998; Finders, 1997; Guzzetti, 1996; Hinchman & Zalewski, 1996; Langer, 1995) based their studies in part on these common assumptions from the sociolinguistic literature:

- Learning is a *social activity*—interpersonal behaviors, both observed and enacted in the classroom, are the basis for new conceptual understandings in cognition and communication.
- Learning is *integrated*—strong interrelationships exist between oral and written language learning.
- Learning requires *active student engagement in classroom activities and interaction*—engaged readers are motivated for literacy learning and have the best chance of achieving full communicative competence

> across the broad spectrum of language and literacy skills. (Wilkinson & Silliman, 2000, pp. 337–338)

The appeal of text-based classroom discussion as a method of engaging adolescents in reading discipline/content materials can be seen in the ever-increasing number of professional texts on the subject. For example, there are firsthand accounts of using discussion to engage unmotivated adolescents (Allen, 1995; Finders, 1997), edited collections that describe multidisciplinary teaching with discussion (Dillon, 1988), and full-blown descriptions of ways to adapt special reading programs, such as the Book Club Project, to various students' needs (McMahon & Raphael, 1997). A whole genre of how-to books has sprung up around the use of text-based discussions in content area classrooms (Dillon, 1994; Hill, 1977) and the art of facilitating "grand conversations" in literature study groups (Peterson & Eeds, 1990).

A common aspect of all these texts is the appeal they have for teachers who value a supportive classroom learning environment, the likes of which Brophy (2001) has listed as his first principle of good teaching. Moreover, Brophy's seventh principle of good teaching—the one that he refers to as practice and application—seems reflected in this literature on text-based discussion, for it is through a teacher's use of discussion activities that students are motivated to engage in subject-matter learning. It is through these kinds of activities that dialogue develops around the content—dialogue that is rich in students' shared background experiences as well as their cultural and linguistic differences. In the qualitative research studies that are highlighted next, I attempt to show how such dialogue works to create a supportive and literate classroom environment in which students find ample opportunities to practice and apply what they are learning from their content area texts.

An important and useful insight to come out of the qualitative research literature on text-based discussions is the marked contrast in what counts as discussion within various classroom activities. As the 1996 work of Hinchman and Zalewski carefully documented, there are four main types of classroom activities involving talk of one kind or another within the conventional transmission approach to teaching and learning in subject-matter areas. These types are lectures, question-and-answering sessions (sometimes called recitations), small group discussions, and assessment-related talk. Although theoretically these categories of classroom talk indicate fairly distinctive interaction styles, in truth, they often blend in curious ways in the everyday world of helping students to read their assigned discipline/content materials.

For example, in one study of text-based discussions involving five teachers in a Grade 7–12, rural, comprehensive secondary school (Alvermann &

Hayes, 1989), the eighth-grade general science teacher counted lecturing as a form of discussion because she "discussed" the previous night's textbook assignment as she lectured on the text's main points. For other teachers in that study and a subsequent one conducted with a similar group of teachers (Alvermann, O'Brien, & Dillon, 1990), the notion of text-based discussion spanned a continuum of classroom talk, ranging from whole-class, open-ended discussions to small-group, literature-study discussions to question-and-answer (recitation-like) drill sessions, which purportedly prepared students for their end-of-unit and end-of-year assessments.

Unlike discussions held by teachers with a transmission approach to teaching content, classroom talk about texts was more student-centered in classes where teachers saw themselves as adhering to more participatory instructional approaches. For example, Wade and Moje (2000) found in their synthesis of the research on the role of text in classroom learning that what counted as discussion within participatory teachers' classes more often than not included students working cooperatively in peer-led discussion groups, reading/writing workshops, and project-based pedagogies (Garner & Gillingham, 1996; Goldman, 1997). Wade and Moje noted that "teachers who have adopted literature-based, participatory approaches have found that they and their students struggle to negotiate a balance between a focus on skills and strategies and a focus on personal response to the literature" (p. 618). A similar type of struggle can erupt in so-called transmission classrooms when students' perceptions of worthwhile discussions do not match their teachers' perceptions. What is important to keep in mind is that regardless of teachers' approaches—whether they be transmission-like, participatory, or some blend of the two—the fact remains that it is *students'* perceptions of the types of teaching and learning that go on in the name of text-based discussions that account for how supported they feel and how willing they are to participate in activities designed to engage them in practicing and applying subject-matter concepts.

Integrated Literacy Instruction

The intended goal of integrated literacy instruction is to teach the English language arts (reading, writing, speaking, and listening) functionally and within discipline-specific areas. The rationale for this method of instruction dates back to the notion that content determines process (see Parker & Rubin, 1966). Again, that idea assumes that subject matter is central and should drive reading instruction. In reality, of course, not all teachers follow this principle. In fact, in the early grades, the situation is often reversed, so that language processing is central, and students' interests in assigned reading materials are considered only incidentally. Where this

reversal is seen most frequently at the middle- and high-school levels is in special pullout programs where reading specialists work one-on-one with students who are unable to keep up with the regular content load. Interestingly, if one were to examine the professional literature on integrated literacy instruction—works such as Nancie Atwell's *In the Middle* (1998), Janet Allen's *It's Never Too Late* (1995), and Susan Hynds's *On the Brink* (1997)—one might come away with the mistaken impression that any right-minded teacher would surely rely to some extent on the integrated method of instruction. However, that is not the case, and apparently for reasons well grounded in the history of integrated literacy instruction.

According to Gavelek, Raphael, Biondo, and Wang (2000), the history of this method can be traced as far back as 1894 to the National Education Association's Committee of Ten and its finding that high-school students were underprepared in language skills needed for interdisciplinary study and entry into college. From there, the nature of integrated literacy instruction assumed several guises, although never entirely losing its interdisciplinary focus. For example, there were calls for integrated literacy instruction during the progressive education movement beginning in the early 1900s, during the Eight Year Study of the 1930s, during the open school movement of the 1970s, and again during the whole language movement and new school reform efforts (e.g., the Coalition of Essential Schools; see Sizer, 1984) of the 1980s and 1990s. What is significant about the long and convoluted history of integrated literacy instruction is that the definition of this method is imprecise, making it practically impossible to attempt any systematic study its effectiveness. As Gavelek et al. deftly pointed out,

> Although integrated approaches have a long history, those supporting them have not clearly delineated the construct. Integrated curricula are often based in life experiences, but it is not clear whether integrating experiences should be the basis for exploring curriculum content, or if the content itself should be presented as an integrated *fait accompli.* Across the decades, our field has confounded these two orientations. (p. 589)

In an attempt to bring some clarity to the situation, Gavelek et al. (2000) overviewed the literature on integrated literacy instruction and identified three categories that composed their conceptual map of what this method entails: integrated language arts, integrated curriculum, and integration of learning experiences in and out of school. The integrated language arts category focuses on instruction organized around either language processes (e.g., reading, listening, speaking, writing) or a literary selection. In the first case, language processes are central, and the choice of reading materials tends to be incidental; in the second case, the situation is reversed—literary texts drive language instruction. The category of inte-

grated curriculum refers to interdisciplinary instruction across content areas, and the last category, integration in and out of school, refers to the need to merge classroom experiences with the learning experiences students encounter in their homes and larger communities.

After completing their review of the literature on integrated literacy instruction, Gavelek et al. (2000) noted their surprise at finding so few research or data-driven articles on the topic, at least in comparison to the large number of practitioner articles available. There were so few research articles, in fact, that these investigators were left wondering if "any push toward integration of any kind might be premature or even ill-founded" (p. 604) at this time. On further consideration, however, they concluded that albeit small, the empirical research on integrated literacy instruction did offer some interesting ways of rethinking the school curriculum. On this basis alone, they recommended not only further research but also a concerted effort among researchers to develop a strong conceptual framework that will help the reading field unpack the messiness of the construct called integrated literacy instruction.

SOME CONCLUDING THOUGHTS

The research and wisdom of practice presented in this chapter on reading discipline/content materials indicates considerable support for a number of Brophy's principles (2001) of good teaching. Furthermore, the National Reading Panel (2000) has validated a number of instructional strategies for teaching students to comprehend their assigned content area materials, including comprehension monitoring, cooperative learning, using graphic and semantic organizers, answering and generating questions, using story structure, summarizing, and preteaching vocabulary. What we do not know, however, is how these strategies play out when used with students from various cultural and linguistic backgrounds. Although up-to-date reviews of the literature exist on second-language reading (Bernhardt, 2000; Garcia, 2000), they provide only meager information on how to teach the upper-grade or adolescent reader. Such information is completely missing in the report of the National Reading Panel (2000). As a result, one is left to wonder about the instructional implications for teaching reading to an ever-increasing number of English-language learners in U.S. schools.

A further limitation of the National Reading Panel (2000) report is its restricted view of the reading process. For example, six of the seven categories of text comprehension instruction that the panel viewed as being backed by valid research represent methods teachers would use if they believed reading comprehension instruction consisted of teaching strate-

gies that enable individual students to work by themselves in extracting information from printed texts. As pointed out elsewhere (Alvermann, 2001; Wade & Moje, 2000), this rather narrow view of the reading comprehension process risks disenfranchising large groups of students for whom print texts are not the primary means through which they learn.

NOTE

1. Part of this chapter is reprinted, by permission of the publisher, from Alvermann and Hruby (2001).

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CHAPTER 8

ENGAGEMENT AND MOTIVATION IN READING INSTRUCTION

John T. Guthrie

THE READING PROBLEM

Schools depend on books. Teachers depend on students reading these books. Under these conditions, what happens if students do not read? Obviously, the consequences are disastrous. Of course, lack of competence is a large source of nonreading. Without skill in word recognition, students cannot and will not gain knowledge from books. However, more pervasive than lack of competence as a source of nonreading is lack of motivation.

Alarming proportions of entirely capable students choose not to read. This phenomenon is shown in national surveys, such as the National Assessment of Educational Progress (NAEP). The NAEP 2000 survey showed that over 50% of Grade 4 students read less than once a week for their own interest and that about half never take a book home from the library. Studies of children's diaries taken over several months have shown that over 60% of 10-year-old students reported reading less than 5–10 minutes a day for their own enjoyment. These students are functionally nonreaders. Some do not pick up books without an explicit request from a teacher. Many nonreaders make the pretense of reading when required. But they do not use reading strategies, such as questioning, that are

137

needed to understand. Reading strategies require cognitive effort, and these students are averse to effort. For reluctant students who avoid texts and text interactions, reading competence spirals downward. As other students gain proficiency in reading, writing, spelling, and knowledge, these students languish and fall behind.

One of the strongest statistical associations in education is the correlation of amount of reading with reading achievement (Cox & Guthrie, 2001). This statistical correlation holds even when other variables are controlled, including students' economic background, intelligence, years in school, gender, and ethnicity. Of course, this correlation shows mutual causality. Increased achievement produces an increase in reading. Likewise, an increase in the volume of reading produces greater achievement. Studies show they are cyclical. Neither is the sole cause of the other. High motivation without competence creates a condition where students want to read but cannot. High competence without motivation creates a condition where students can read but do not. Neither of these conditions enables students to grow. Clearly, both competence and commitment to reading are necessary for school-relevant literacy. In view of this mutual dependence, reading programs should incorporate principles to assure that students are engaged and motivated, as well as competent in reading.

PROCESSES OF ENGAGEMENT IN READING

It is well established that a competent reader is intrinsically motivated. Across the age span from Grade 3 to adulthood, proficient readers show the traits of intrinsically motivated behavior (Wigfield & Guthrie, 1997). They read for its own sake, and they read frequently for personal interest. Intrinsically motivated readers have a sense of deep immersion during the reading process, an orientation to find challenging material, and enjoyment in the experience of reading. They read for longer amounts of time, with greater cognitive proficiency, and with more positive affect than readers who are less intrinsically motivated. In quantitative studies, major aspects of intrinsic motivation for reading, consisting of curiosity (reading to learn about the world), involvement (reading to become absorbed in text), and preference for challenge (enjoyment in reading complex material), predict students' reading frequency and reading comprehension (Guthrie, Wigfield, Metsala, & Cox, 1999).

Extrinsic motivation (desire for recognition and enjoyment of competition) is less highly related to reading comprehension and to such factors as selecting a major in college than intrinsic motivation. However, extrinsic motivation is moderately associated with intrinsic motivation. The most dedicated and capable learners in reading possess a combination of intrinsic

and extrinsic motivation (Wigfield & Guthrie, 1997). Both the type of motivation (intrinsic and extrinsic) as well as the level of motivation set the foundation for a trajectory of future participation and achievement in reading.

Intrinsic motivation in reading is a highly prized goal for teachers. Nearly all teachers value the processes of intrinsic motivation, whatever the content domain. Teachers attempt to foster lifelong reading as a goal of their instruction and an appreciation for knowledge in classrooms (Sweet, Guthrie, & Ng, 1998). The challenge is how to build classroom contexts that foster intrinsic motivation. While these goals are frequently embraced, there is relatively little practice in classrooms and relatively little database understanding in the research literature on structuring classroom context in ways that build intrinsic motivation in reading. I propose that the power of situational interest can elevate long-term intrinsic motivation for reading, under formable classroom conditions.

SITUATIONAL INTEREST IN READING

Interest in something, whether it is a topic, book, person, song, or phenomenon, refers to positive affects, approach behaviors, and the disposition to get to know the object of interest. Interest has many forms and varieties. Two forms frequently distinguished in research literature are situational interest and individual (or personal) interest (Hidi & Harackiewicz, 2000). Situational interest is a strong positive affect to a highly particular object or event. This interest is fleeting and ephemeral, despite its momentary potency. On the other hand is individual or personal interest. This form is distributed across particular settings or cases. It is an enduring quality of the person. For example, a person could have a situated interest in one verse from a poem by Yeats because the lines are personally poignant. The individual may not be enamored of poetry in general or knowledgeable about it. Perhaps she is unfamiliar with Yeats as a poet and may not recall this poem in the future. None of this undermines the salience of the verse. In contrast, another individual may bring extensive knowledge to these lines of Yeats. She may be familiar with many eras of poetry as well as Yeats and with the historical context of this particular poem. Such would comprise personal interest in this poetic text.

In schools, situational interest is often evoked by "hands-on activities," which may occur in science or historical inquiry. Hands-on activities usually command attention and are enjoyable to elementary-school students. For example, if a naturalist brings a boa constrictor to the classroom, students are likely to be curious, attentive, and questioning, if not stunned into speechlessness. In any case, they are unlikely to be blasé or passive during the display of the boa. Of course, these students may not possess long-term

interest in science or reptiles, but this moment of encounter with the boa constrictor is arousing, energizing, and attention-focusing. This situational interest can be utilized, I suggest, to give purpose, direction, and cognitive energy to a range of reading and literacy activities.

My belief is that situational interests in tangible objects and events (such as a snake in the classroom) are valuable initiating points for reading-comprehension activities in information texts and expository books. It is my proposition that the situational interest aroused by a tangible object or event is readily transferable to texts that address this identical object or event. That is, an information book about boa constrictors will catch the situational interest of students excited by the live boa constrictor. Through reading, the student can extend that interest across time. Reading may bridge that interest into related topics and texts. For example, if a student spurred by an in-class encounter with the live animal reads about a boa constrictor, the student is likely to be curious to read about other snakes. Having read a snake book, the student may be induced to read about reptiles. Thus, the reading interest radiates out from the live animal to the text on that animal and to the text on related animals. The growth of reading comprehension is from a specific text that is situated in a given phenomenon to a broader range of texts that encompass a variety of phenomena, concepts, and principles.

Situational interest in reading is also initiated by some texts. Presenting a new well-illustrated storybook to children is known to be compelling. Trade books are often lavishly illustrated and magnificently designed for children. Books with photographs, diagrams, captions, and explanatory principles are frequently attractive. It is commonplace that books about dinosaurs with multiple drawings and illustrations are compelling to middle elementary-school children, especially boys. A favorite dinosaur often mesmerizes children. This frequently reveals situational interest. These same children may not be generally interested in reading or oriented toward learning more about this topic

One challenge for educators is to foster development from situational interest to intrinsic motivation. It is valuable to enable children to progress from situational interest (for instance in one boa constrictor) to intrinsic motivation for a broader domain (such as reading about science). I suggest there is a developmental progression from situational interest in a particular phenomenon to long-term motivation. The phenomenon could be in the physical environment (e.g., a killer bee and its victim) or a text (e.g., an illustrated book on killer bees). The eventual motivation could be related to the physical phenomenon (observing insects), or it could be related to reading about the phenomenon (reading about insects). Providing a scaffold for the emergence of intrinsic motivation out of situational interest is the educator's challenge. The following vignette is an example of one such scaffold.

A VIGNETTE FROM SALLY TRENT'S CLASSROOM

We will visit the third-grade classroom of Sally Trent in a Frederick, Maryland, elementary school. It is located in a middle-income neighborhood in a semirural town. Nearby is an army base. Sally has been integrating reading instruction with science and social studies. She attended summer workshops that provided her with frameworks for planning. Her principal is completely behind her new program design. She is teaching a unit on the topic of "Birds Around the World."

Crossing the threshold of Sally's classroom, we see displays of materials. On our left is a collection of bird nests hung in clear plastic bags on a bulletin board. Since the beginning of the school year, her students have been collecting and contributing to this display. Adjacent is a classification of bird feathers also collected by the children and arranged according to size and type of bird. These feathers were the objects of intense scrutiny, drawing activities, and reference-book reading at the outset of the school year.

In the middle of the room is a pair of white doves in a large cage. Stephanie brought these to the classroom. A nest in the cage contains a brown-spotted egg. Stephanie is vigilantly watching for the egg to hatch. Lining both sides of the room are narrow tables filled with books on the biomes of the world. Sally has begun her units by exploring diversity among habitats across the globe. The students have learned about deserts, rain forests, grasslands, arctic regions, and temperate forests. The main focus of their units is not the geography of these regions but how life survives in them. To give these third graders a focus, Sally is emphasizing birds and how they live in these diverse lands.

Sally's instruction is directed primarily toward a few major ecological concepts. While these concepts are profoundly complex, she has simplified them for 8-year-olds. At this point, she is emphasizing how plants and animals survive through interacting with their environments. These interactions have been captured in nine concepts: eating, competition, defense, locomotion, communication, respiration, reproduction, predation, and adaptation to habitats. For children, these ideas boil down to such questions as: What do they eat? How do they get around? Do they fight? How do they have babies? What enemies do they have? All creatures, including birds, cope with these challenges.

What do birds eat? In particular, what do owls eat? Again, to give these youngsters a focus, Sally led them in an activity of dissecting owl pellets. Students were familiarized with owls. They made predictions about what the owl pellets might contain. They expected to find the brains of squirrels, hearts of mice, heads of birds, and teeth of different animals. After dissecting, students were delighted not to be grossed out by blood and juices.

Some students performed elaborate classifications of their owl pellets. Other students assembled bones to form the skeleton of a vole.

After these activities, Sally began encouraging her students to ask questions. The students recorded questions about the owl pellets in their science journals. They answered these questions in their dissections. Sally extended student questioning by enabling them to ask about any aspects of birds, their lives, and their survival. The students wrote questions in their reading journals. They would answer these by reading. At this point, the students were highly invested in learning about owls. They were eager to pursue their interests through information books.

On this day, Sally opened a discussion with the students about information books and how they are organized. These information books revealed animal habitats, biomes, and bird survival. Such books were new to these youngsters. For most of their young lives, these students had read only stories. In kindergarten and Grades 1 and 2, students read stories during their reading instruction. Traditionally, stories represent the main diet of primary reading instruction. Stories are exciting and can be personal. This leads the majority of teachers to emphasize them strongly. However, information books can be fascinating to young students. Regrettably, it is rare that expository books are introduced in Grades 1–3.

The children browse their books on owls. They are entranced by the illustrations. But the students are not as able to use these books to gain information as one might expect. To show the power of information books for satisfying their curiosities about owls, Sally acts as a guide. She explains how the table of contents and the index can help. Sally helps her students see how paragraph headings can be keys for unlocking secrets. The students explore the conventions of exposition, including the use of boldfaced words for emphasis, captions as links between pictures and text, and glossaries for technical information. They learn that the organization of information on a single page of expository text often contains a broad principle illustrated with the vivid details of several examples.

Sally has been teaching the processes of *searching* for information. In the electronic age of websites, CD-ROMs, and electronic encyclopedias, searching for information is a vitally important skill. Sally knows her students will need this strategy. She cannot afford to defer this instruction to the school's media specialist, as many of her colleagues do. She takes it as her own responsibility to teach this twenty-first century reading skill.

Having initially introduced students to the conventions of information books for approximately 30 minutes, Sally crosses the room and steps up to a bulletin board. The students will practice their newfound reading strategy of searching for information. But their practice will be placed in the context of learning about owls. To learn and polish skills, Sally believes,

practice should not be isolated. Skills should be useful for answering burning questions.

First, Sally says, "You all have an owl book in front of you. I want us to think of one good question that we can work on together." Billy raises his hand. "Okay, Billy, but I want you to browse your book for a couple of minutes and think of your questions. When you find a really good question that you think we can use this book to answer, raise your hand. You each have your own book, so you don't have to share right now." She moves among the teams. Some children are skimming through the owl book. Other students are immersed in one page. Quiet reigns in the classroom. Students are energetic but silent.

"When you think of your questions, what chart should you be looking at?" Sally asks. Students raise their hands, pointing to a chart of ecological concepts on a bulletin board. The familiar terms of competition, locomotion, predation, defense, eating, respiration, communication, and reproduction are written on colorful banners. "Can you ask a question about communication? Think of a question that will help you learn about survival," instructs Sally. A few minutes later, Sally says, "It looks like most of you have written a question."

"Now I will write down your questions. We will decide as a group which one we want to use in our search," Sally states. Alicia raises her hand and offers, "How do owls protect themselves?" Sally writes this question on chart paper on the board. She points to another student, who asks, "How do male owls find a mate?" Sally writes this question on chart paper. She calls on Philip. "Do owls live in groups?" he asks. She takes another volunteer. "How sharp are owls' claws?" asks Tang. Sally says, "Let's have one more." Serena offers, "What kind of enemies do owls have?" Sally writes all the questions on the chart.

"Now, let's put these questions into the concepts for survival," Sally suggests. Pointing to the first question, "How do owls protect themselves?" Sally asks, "What would this one be? Locomotion?" She calls on Corey and asks, "Which category would that go under? It might go under more than one category." She writes "locomotion" under the question.

"Do owls live in groups? Which one does it go under? Would you think?" questions Sally. A student calls out, "Communication." Sally responds, "That's a good one." Students classify all the questions into ecological concepts.

When the students vote on their favorite question, the winner is "What enemies do owls have?" Sally emphasizes that this is the class's favorite question. It is a good and interesting question.

Next, Sally ponders aloud, "Where to find that answer?" Students chime, "In books!" "What tool am I going to use?" Sally asks. "The index," several students call out. Sally directs their attention. "You all have owl books on

your desk, and you can use any of them to answer our class question. You may use any of those books that you like." A productive buzz begins. Students reach for books that are familiar, accessible, and useful. On their desks are books that range from Grade 2 to Grade 5 reading levels. The disparity in reading levels in this classroom is about average for this school, a span of at least three grades. Students are judging the relevance of topics, locating appropriate information, sifting through interesting details, rethinking their questions, and finding answers.

Sally shifts the activity. "Chris is going to come up and show us what he found," says Sally. On an overhead projector, Chris shows the class that he found the heading "Bird Bullies." The section describes owls but not the enemies of owls, so Chris has not addressed the question yet. Jamal offers, "One enemy was other owls." Sally records the finding on the chart. Other students report that enemies of owls include eagles, snakes, hawks, cats, and blue jays. When blue jays are announced, Sally is surprised. She did not know that blue jays could be the owls' enemy. She asks the students to document their finding. The students show her text stating that several blue jays could harass an owl. The students complete the list by noting that people are an enemy of the owl.

Next, Sally orchestrates a learning activity that builds on these questions. Each team selects one animal from the biome they have been studying. As a team, they answer all the questions that have been posed for the owl. The students spend 40 minutes reading to answer survival questions about the hunting, predation, defense, communication, and reproduction of their newly chosen animals. As their knowledge accrues and their links develop, their conceptual understanding of ecology slowly takes shape. They are gaining structural knowledge from reading.

INSTRUCTIONAL PRACTICES FOR SUPPORTING ENGAGEMENT AND MOTIVATION IN READING

I have abstracted several instructional principles from effective classrooms. Some of them are visible in the vignette from Sally Trent's classroom. Generally, these principles are present in classrooms that foster reading engagement. Also, they are relatively absent from classrooms where students are less engaged in reading to learn.

Using Knowledge Goals for Reading-Comprehension Instruction

The first principle is that classroom goals for reading instruction should be primarily oriented toward knowledge. This is paradoxical. Experts concur that comprehension consists of competence in cognitive strategies such as using background knowledge, questioning, summarizing, and organizing graphically. I agree, but I suggest that reading strategies can be most easily attained if they are anchored to knowledge goals. The rationale for such anchoring is that situational interest in science or social studies activities can be linked both to the knowledge goals and to the text. To teach students the reading-comprehension strategy of summarizing science text, it is valuable to arouse their situational interest about a science topic. For instance, having an iguana in the classroom arouses situational interest. If this situational interest is related to the knowledge goal of reptile adaptation in different biomes, such as deserts, then the situational interest in this reptile becomes connected to knowledge goals of broader significance. Radiating outward from the iguana and a brief book on iguanas, interest can extend to reading about diverse reptiles in different biomes. Such reading, initiated from the situational interest, provides increased understanding about reptiles and their adaptations. This understanding will grow rapidly if students are permitted to pursue their curiosities to gain extended information and conceptual knowledge.

Reading instruction using knowledge goals permits the teacher to arrange for situational interest from phenomena. This situational interest can be transferred to books on the same topic containing pictures, captions, and explanations about the phenomenon and related ideas. The knowledge goals also provide a long-term framework for reading and learning from text. Reading about a topic of an immediate situational interest can be extended in time and in depth.

Linking Real-World Experience to Reading

The principle asserts that when situational interest in a tangible object or event is aroused (e.g., seeing a boa constrictor), text related to this situational interest (an information book on boa constrictors) will be read with the same attention, curiosity, and positive salience that accompanied the situational interest initially. This principle may be self-evident to outstanding teachers. However, this effective classroom scenario is not well addressed in the theoretical literature of reading. The benefit of the transfer of situational interest to text is that the text is read deeply under these conditions. It is known that situational interest evokes deep processing,

questioning, and a sustained effort to understand. When these cognitive supports are provided for text comprehension, a student's reading will improve. When situational interest is transferred from activity to text, the most desirable cognitive processes for reading comprehension are spontaneously evoked. Students reading a text about a boa constrictor, after observing one, will activate prior knowledge, question, summarize, monitor comprehension, seek information, and organize their new understanding relatively well. Having initiated these reading-comprehension strategies via situational interest, the teacher can help students become aware of them and use these strategies as deliberate tools for text comprehension in future settings.

Supporting Students' Autonomy in Reading

Part of the bridge between situational interest and intrinsic motivation is support for the students' process of choosing and behaving autonomously. When students are offered reasonable choices, they are invested in learning activities more fully. If these choices are carefully connected to learning activities, autonomy support will increase academic achievement (Ng, Guthrie, Van Meter, McCann, & Alao, 1998).

One rationale for providing autonomy support in connection with situational interest relates to children's uniqueness. Encountering an object of attention, such as the boa constrictor, each student has a different focus point. Some students will see the snake's eyes; others will observe its scales; its length impresses some; others want to know about the strength of the boa constrictor's muscles. If students are permitted to exercise their own choice about what to read regarding the boa constrictor, they will follow their interest into the text. Some students will read about scales and others about the snake's strength. In either case, they extend and sustain their situational interest. Consequently, support for meaningful choice and autonomy within a context of situational interest is an interest-extending act on the part of the teacher.

Many children respond positively to the opportunity of controlling their own learning. They like to choose books, write about personally selected topics, and identify personally relevant or uniquely valuable aspects of a topic domain or a text to learn more about. Providing options, menus, and bounded choices are the teacher's most powerful tools in facilitating the development of intrinsic motivation for reading. For example, in science, when students are able to pose their own questions, design their own experiments to answer the questions, and collect data in ways that they design, their intrinsic motivation for participating in the activities is enhanced.

Therefore, autonomy support in an integrated science and reading unit of instruction appears to facilitate motivation for both disciplines.

Using Diverse, Interesting Texts for Instruction

Compelling books bring out situational interest. An illustrated, artfully designed information book is appealing. It induces an immediate desire for interaction with the text. I refer to "interesting texts" as those books that include the following set of qualities: familiar content, vivid details, perceived readability and accessibility, and a range of visual designs, including photographs, illustrations, and typographies. Interesting texts are adoptable. Students believe they could possess the text and thus possess the information.

One important feature of interesting texts is that they are perceived to be readable. Within a classroom, this implies that different levels of reading difficulty are needed. In today's typical, heterogeneous fifth-grade classroom, students' reading levels often range from Grade 2 to Grade 7. If one textbook prevails as the main source of knowledge and instruction, a majority of the students within this classroom are likely to be precluded from full participation in the lesson and in long-term learning. Diverse texts allow students to read about subtopics of interest to them. If the learner's situational interest in the unit lesson on reptiles is to find out how reptiles live without drinking water, the student would need a range of text opportunities. Consequently, a range of books is necessary to the process of facilitating intrinsic motivation in the context of situational interest.

Collaboration for Learning From Texts

Collaboration for learning in a knowledge-based reading unit can increase motivational development. Because the act of socially interacting is itself gratifying, collaboration during learning from text increases motivation for reading (Ng et al., 1998). If students are unified in trying to understand a topic such as reptile adaptation, and they have mutually enjoyed the situational interest of observing a boa constrictor, they will spontaneously collaborate in reading texts to extend their knowledge. Encouraging students to learn about different aspects of the general topic and to merge information in group discussions can facilitate the collaboration process. Classroom posters or student team publications can create the social interchange that will enhance the positive affects surrounding learning from text. The affects related to social interchange are intermediaries between the situational interest of observing a phenomenon or seeing a text and the

long-term intrinsic motivation for reading that text. Collaboration is a contributor to the bridge from situational to individual interest.

Empowering Students With Cognitive Strategies

Intrinsic motivation for reading cannot occur in the absence of competence. Students do not sustain high motivation for an activity in which they are incompetent. To the contrary, capability to succeed in reading is necessary to students' self-perceived competence, which is an important aspect of motivation. In order to facilitate long-term motivation, teachers should provide direct instruction of cognitive strategies such as using knowledge, questioning, summarizing, and organizing. With these cognitive tools, students can build on their initial situational interest. Students who can use strategies can learn from a book on a topic they are curious about. If students lack the skill to use these cognitive strategies, their learning will be limited. Their ability to extend their situational interest into more profound conceptual understanding will be constrained.

Empowering students to learn what interests them by using the cognitive tools of reading has several benefits. One benefit is that it facilitates the perception of competence in using the strategies. For example, when students realize they can ask questions that will be instrumental in their learning, they gain self-efficacy for questioning. Further, if these cognitive strategies increase students' knowledge about topics of their choice, students have learned about a topic of personal relevance, which is gratifying. The reward of knowing is likely to increase the frequency and thoroughness of strategy applications.

Summary

These six practices of support for reading engagement and motivational development are linked. It is evident that each of these strategies depends on the others and that they are not easily implemented in isolation. Knowledge goals must be followed by relevant real-world experiences. Experiences that provide situational interest should be connected to texts. Students' independence in reading these texts clearly depends upon their interests. Strategy instruction is obviously indispensable to full engagement in reading. These practices represent a network of interlocked threads rather than a list of independently functioning elements. Nevertheless, each practice can be discussed and its implementation can be a topic of debate among teachers. Each principle can, furthermore, be a topic for investigation.

Motivation is not a mere auxiliary to the processes of reading comprehension. Motivation energizes and directs those forces. Requiring deep thinking and persistent behavior, reading comprehension rests on the bedrock of motivation. Most importantly, motivation fuels reading-strategy development. Classroom contexts that nurture the fusion of cognition and motivation have a good chance of being productive. Teaching that embodies the previously presented principles for fostering reading engagement are likely to be optimal for reading achievement.

RESEARCH EVALUATION OF CONCEPT-ORIENTED READING INSTRUCTION

Do these principles of comprehensive reading instruction improve student learning? First, to examine the power of these principles, my colleagues and I built an instructional framework that embodies them. In collaboration with teachers, we implemented this framework, Concept-Oriented Reading Instruction (CORI), into schools in Grades 3 and 5 (Guthrie et al., 1996). In a one-year implementation, we examined whether children in third-grade and fifth-grade classrooms improved in reading comprehension and reading motivation. We found that a majority of the students increased in comprehension of both information text and narrative text. We also gave students questionnaires and interviews that captured their motivations, such as curiosity, involvement, preference for challenge, desire for recognition, and competition in reading, as well as their amount of reading inside and outside of school. Students in CORI classrooms increased their intrinsic motivation and decreased their extrinsic motivation. Most important, students who increased in reading strategies also increased their intrinsic motivation. In other words, reading-comprehension strategies and reading motivation were interlocked. We refer to this intertwining of strategies and motivation as engagement. Students who are engaged in reading are both motivated and strategic. A motivated reader who does not possess strategies cannot be engaged. Likewise, a strategic reader who is not motivated cannot be engaged. Both conditions of motivation and competence are necessary.

Although CORI appeared to foster engaged reading, we had not compared it to traditional instruction. For a comparison, we conducted a quasi-experiment. CORI and traditional reading instruction were provided for a one-year period to Grade 3 and Grade 5 students (Guthrie et al., 1998). All children were given a performance assessment of reading comprehension at the end of the year. This assessment captured the children's reading comprehension, reading strategies, motivation for reading, and science knowledge. In making comparisons, we held students' background reading

achievements and gender constant statistically. Students who received CORI instruction were significantly higher than students who received traditional instruction on their use of reading strategies. These reading strategies consisted of reading a variety of information texts, taking notes, writing summaries, selecting relevant information, and identifying main ideas. Statistically, the CORI students showed an effect size of .91, which is a substantial advantage over traditional students. This signifies that the mean of the CORI classrooms was approximately 20% higher than the mean of the traditional classrooms on these tests.

In a second experiment, with new students in CORI classrooms and traditional classrooms, new materials were taught, and two assessments were administered (Guthrie, Anderson, Alao, & Rinehart, 1999). In this study, CORI produced an effect size of .66 compared to traditional instruction in the same schools. CORI students were 12% to 15% higher than traditional students on the reading-comprehension measures.

In these investigations, students were also tested on science knowledge. CORI students were substantially higher in their understanding of ecological principles than traditional students. In the assessments, students read about topics such as ponds and deserts, with an emphasis on the survival of plants and animals within these environments. Students were then asked to write their understanding of the biomes and survival within them. We coded students' writing for its display of knowledge about the biomes and the interdependency of life. The superiority of CORI students on these writing tasks showed their advantage in being able to learn new knowledge from reading materials. After participating in instruction characterized by the previously presented principles, students were able to build new, complex ideas more fully and more rapidly than comparison students.

It might be noted that this knowledge was mediated by reading-comprehension abilities. Students gained in science knowledge only if they gained in reading comprehension. Students' improvement in science knowledge was dependent on their improvement in the use of reading strategies to learn from science texts. These data show that CORI was useful for the practical purposes of learning new knowledge from trade books and school materials. The benefit was not limited to a measure of the reading strategies apart from learning new knowledge. (It is possible to measure the strategy of questioning without measuring the benefit of questioning for new knowledge acquisition.) The contribution of CORI was not limited to reading a single genre such as literature or exposition. Further, the measure of reading performance was not limited to student self-reports of strategies, nor was it limited to teachers' judgments about students' abilities.

We expected that reading instruction using the CORI framework would improve reading motivation. In a one-year, quasi-experimental investigation, CORI students showed advantages over traditional students in the fol-

lowing motivational attributes: curiosity, involvement, and preference for challenge (Guthrie, Wigfield, & Von Secker, 2000). These are elements essential for intrinsic motivation in reading. Because intrinsic motivation strongly correlates with students' amount and breadth of reading, and amount of reading increases comprehension, these elements of intrinsic motivation are valuable for the long-term reading growth of students. In these comparisons, we also examined extrinsic motivation. CORI students and traditional students were equal in such motivational attributes as desire for recognition, competition, and grades as motivators. This is sensible, since we designed the CORI principles to influence intrinsic motivation but not extrinsic motivation. Our reasoning was that increasing intrinsic motivation would foster long-term reading growth more effectively than extrinsic motivation. Only long-term tests of this expectation (such as that being conducted now with an IERI grant) will enable us to see whether we are correct.

Our investigations of Concept-Oriented Reading Instruction reported here were based on the experiment as the research tool. We believe experiments provide optimal information about an intervention. If an educational designer or investigator can intentionally produce a desired effect in a valid measure of student learning, support for the design is especially strong. To produce such experimental effects, the designers and teachers must take account of all the necessary factors that are needed for an effect like improved comprehension. Nothing can be left out. Many details must be accurately planned and implemented, including the following: children's characteristics, reading materials, writing activities, motivation support, parental involvement, classroom management, scheduling, and administrative structures in the school and district. If a crucial factor is omitted, the implementation will flounder. For example, if the design omits the time that is necessary for students to write about their reading, then the full framework of instruction will not likely affect reading comprehension. Having conducted a successful experiment, the investigators and teachers are in a position to say "we produced these benefits for students by intention." This claim is usually not possible in an observational study in which teaching is described. In such descriptions, one never knows what crucial factors may have been neglected. Of course, the experimental method is accorded a special place in science for its power in showing causal relationships. Likewise, experiments provide relatively strong knowledge about the benefits of interventions for student growth in reading comprehension.

We have also investigated whether the principles contained within CORI are effective in other contexts. In one study we asked, "What factors will predict gains on MSPAP, the statewide test in Maryland?" We wanted to know what factors in the reading-comprehension instruction in classrooms

were associated with improvements in reading comprehension on the Maryland accountability test. We administered a questionnaire with 100 items to 575 teachers in Grades 3 and 5 in three school districts. We used the questionnaire to predict gains in reading comprehension from 1994, 1995, and 1996. We found two main factors in reading instruction that made a difference in Grade 5. None of these factors predicted achievement in Grade 3 (Guthrie, Schafer, Von Secker, & Alban, 2000).

Two factors were present in the Grade 5 classrooms that gained in reading between 1994 and 1996. These factors were less evident in classrooms where students stayed constant or decreased in reading comprehension. The first predictive factor was integration of reading-comprehension instruction and science content or social-studies content. Teachers who merged their content instruction and reading instruction produced gains in reading comprehension. In contrast, teachers who separated and departmentalized their instruction were more likely to have decreases in reading comprehension. Second, an abundance of books and resources used in reading instruction predicted gains. When teachers used a wide range of trade books, Internet resources, reference books, and other media-center materials, reading-comprehension scores improved. In contrast, when teachers adhered closely to their basal and did not use a wide range of other materials, reading scores declined. These trends occurred for low-achieving schools as well as high-achieving schools. The benefit of integrating reading-comprehension instruction and content instruction was not limited to advanced students or affluent schools. Integrated instruction and abundant books were powerful for low achievers and classrooms in low-income neighborhoods. This investigation confirms that two of the CORI principles (using knowledge goals for reading instruction and using an abundance of interesting texts) are associated with successful instruction on a much broader scale. In other words, these factors are generalizable to a wide range of classrooms, teachers, and students.

We have conducted other types of investigations of the principles discussed here. These include formal experiments in which particular factors within CORI (e.g., hands-on science activities and interesting texts) are manipulated. Our inquiries have yielded portraits of teachers, case studies of students, and analysis of videotapes of classroom dialogue. In this short manuscript, I do not have the space to communicate the findings from all of these investigations. However, recent publications cited at the end of this manuscript contain references to these additional studies. The following recommendations are based on this collective body of evidence.

RECOMMENDATIONS

Successful reading programs, especially those that enhance reading engagement and motivation in Grades 3–5, embody the following principles:

- Using knowledge goals for reading-comprehension instruction.
- Linking real-world experience to reading.
- Supporting students' autonomy in reading.
- Providing diverse, interesting texts for instruction.
- Supporting collaboration for learning from texts.
- Empowering students with cognitive strategies through explicit instruction.

I believe that research supports these principles in middle school as well (Guthrie, Wigfield, et al., 1999). However, the evidence is most persuasive in the later elementary grades.

When students perceive that these principles prevail in their classrooms, they gain a belief in their context for learning through reading. Students who experience these conditions become engaged. They become the architects of their own cognitive growth and affective maturity.

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CHAPTER 9

GOOD FIRST TEACHING

Making the Critical Difference for All Students

Gay Su Pinnell

Strong early literacy instruction makes a critical difference, not only in children's reading and writing achievement but also in their positioning of literacy in their lives—as a tool for thinking and learning as well as a constantly available resource for communication and life's enjoyment. For those reasons, national attention is focused on children's preschool experiences as well as the early years of schooling. Researchers, teachers, and policymakers are bringing together what we know, searching for new information, and thinking deeply about teaching and learning.

This book represents an extended conversation about successful early reading instruction—about how teachers can provide it as well as how we can help them develop the tools they need. As my part of the conversation, I will discuss some basic understandings that form the foundation for lifelong literacy and will illustrate how classroom teachers can increase children's learning across a range of dynamic instructional contexts. Finally, I will propose a model for the effective, deliverable professional development that is essential for establishing good first teaching.

155

EARLY UNDERSTANDINGS IN A BALANCED LITERACY PROGRAM

Although researchers are still investigating important questions, we now know more than ever about the complex process of reading. Working from different perspectives, researchers have uncovered evidence that critical early understandings are related to successful literacy. I will discuss 10 interrelated categories of understanding drawn from this research (see Table 9.1).

Table 9.1. Early Understandings Critical for Literacy Achievement

Category	*Children learn to*
Uses of Written Language	• See written language as a source of enjoyment. • Expect that written language will be meaningful. • Use written language for many purposes.
Concepts of Print and How It Works	• Move through a book from front to back. • Follow a line of print from left to right, top to bottom. • Understand how space is used to identify individual words. • Match one spoken word with one written word while reading continuous text.
Phonological Awareness	• Hear rhymes and word parts. • Hear individual sounds in words. • Identify and separate the sounds in words. • Recognize, create, and use rhyming words. • Blend onsets and rimes to form words orally. • Identify initial, final, and medial sounds in words. • Recognize distinct sounds and blend them to make a word.
Visual Features of Print	• Recognize, name, and use alphabet letters in many different contexts. • Write all letters legibly with efficient motor movements. • Identify and locate individual letters within words and within continuous text.
Letter–Sound Connections	• Connect alphabet letters and letter clusters to sounds. • Recognize and use several different sounds that may be connected to a letter. • Recognize and use the several letters that may be connected to the same sound.
Word Recognition [High Frequency]	• Identify and locate individual words within continuous text. • Recognize and know in detail a core of high-frequency words that can be used in reading and in writing.

Table 9.1. Early Understandings Critical for Literacy Achievement (Cont.)

Category	*Children learn to*
Word Patterns	• Recognize and connect words by common letter clusters. • Recognize and connect word spelling patterns in words (phonograms, consonant and vowel patterns).
Word Structure	• Recognize syllables in words. • Understand the structure of contractions. • Understand the structure of compound words. • Understand how plurals are made. • Understand affixes in words.
Word Meaning	• Know the meaning of a wide range of words that they meet in reading texts at early levels. • Know the meaning of a wide range of words that they hear in texts read aloud to them.
Word-Solving Actions	• Know and use regular letter–sound correspondences to recognize or solve regularly spelled one- and two-syllable words in reading and writing. • Recognize and use letter clusters and other patterns in words while reading and writing. • Use onsets and rimes to solve new words while reading and writing. • Quickly recognize or access words while reading and writing. • Monitor their reading for accuracy. • Check on their spelling while writing. • Recognize and use simple punctuation to guide phrasing and expression in reading and to communicate meaning in writing.

Uses of Written Language

It seems obvious that young children must learn early that written language holds the promise of meaning and enjoyment, yet we sometimes forget the value of this foundation as we plan our instructional time. The magic of hearing stories, rhymes, and poetry as well as the power of seeing one's own name written and of trying out writing for oneself are parts of childhood. Many children have extensive preschool experiences through which they learn the power of written language as adults read to them (Adams, 1990). They see the adults around them writing and try it out for themselves. These early literacy experiences stand them in good stead, because they learn to associate writing and language and begin to appreciate the special qualities of written language (National Reading Panel, 2000). Contrasted to oral language, written language shows some important differences.

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- *Sentences are organized in particular ways.* Written language is not simply "talk written down." Children must acquire a sense of the special syntax. For example, when three-year-old Sarah "reads" *Owl Babies* (Waddell & Benson, 1992), she says, "And the Mommy Owl swoops to Sarah and Percy and Bill. They cried, 'Mommy! Mommy!' and flapped and flapped." Sarah is not tracking print, but her rendition clearly reflects the author's word selection and syntax. Even very young children who have had the opportunity to hear stories will begin to use this "book talk" as they approximate reading.
- *Written language includes special words.* As they hear adults read, children meet words like *exclaimed, asked, replied,* and *cried* (used above by Sarah) that they do not regularly hear in speech.
- *Written language has special uses.* Through high-quality literacy experiences, children learn that stories are to read and enjoy and that other texts help us get information. They also learn that writing has special purposes, such as communicating to friends and family, writing lists of things to buy or do, recording numbers, or filling out forms.
- *Written texts are organized in particular ways.* Through hearing texts read aloud, children learn that stories have beginnings, events, and endings, or that informational texts have interesting facts in categories. They learn to predict the series of events and story endings.
- *Written texts present special people to meet.* In stories, children enjoy a range of people and fanciful characters that develop the imagination. They learn that owls are wise, foxes are sly, monkeys are clever, and all characters have problems to solve.
- *Noticing features such as sound and rhythm makes hearing written language more enjoyable.* Many stories for young children have rhythm, rhyme, and alliteration, or other word "play" that sensitizes them to the sounds of language. For example, kindergartners recite together, "I'll huff and I'll puff and I'll huff and I'll puff" as they revisit a favorite text. A three-year-old "reads" "One fish, two fish, red fish, blue fish." Rhymes, songs, and poems are part of childhood. This powerful language, internalized through enjoyable activity, forms a reservoir of examples that will help children become more sensitive to the sounds within words.

Children with rich, preschool experiences have high expectations of print and may even work out many early concepts for themselves. Adams (1990) has cautioned, however, that many children reach kindergarten with very little of the rich set of understandings described above and may feel lost in the world of literacy. They will require explicit instruction in the many different areas listed here; but they will also need to be invited into the meaningful world of written language.

Concepts of Print

Written language is communicated through graphic symbols that are arranged using particular conventions. In English, we have an alphabetic system, which means that 26 characters (two versions of each) are used in various combinations to represent the words of the language. Words consist of clusters of letters and appear in rows, starting at the top of a page. We process print in rows from top to bottom, reading each row from left to right and matching one spoken word with one printed word, as defined by space on either side. Other graphic characters, called "punctuation," along with an implicit sense of meaning and syntax, assist us in parsing the printed text into meaningful phrases, sentences, and paragraphs.

Concepts of print are acquired by looking at print within continuous text, noticing aspects of print as adults model its use, and, to some degree, behaving like a reader. Children who have experienced "lap" stories may have noticed much about how print works; but most schoolchildren need strong teaching to help them develop these basic concepts. Early readers explore print and its layout even before they have developed the ability to decode words (Ehri & Sweet, 1991).

Phonological Awareness

A basic and critical early concept is the idea that letters represent small sound units within words. This system makes it possible for a limited set of signs to represent all of the sounds and words of English. Grasping the alphabetic principle means understanding that written words are made up of letters and that these letters are approximately matched to the sounds of language; that is, the graphic units of the alphabet are related to the phonological structure of words (Liberman, Shankweiler, & Liberman, 1985).

In oral language, speakers and listeners automatically process speech signals; human beings are uniquely programmed to do so. In speech, the consonants and vowels are coarticulated; they do not stand out as separate entities. This coarticulation is not a problem for oral language, but it does make it hard for children to learn that words have an internal phonological structure. Phonological awareness, then, means our knowledge of the sound system of language. As they become sensitive to sounds, children recognize that spoken words consist of sounds, or phonemes, in sequences (Ball & Blachman, 1991). They develop the ability to hold up language and its sounds to conscious attention and analysis. They can determine when words start or end as other words do; they become aware of rhymes (ending parts).

Phonological awareness means *hearing sounds* rather than relating letters and sounds; nevertheless, phonological awareness is an important under-

standing that is basic to grasping the alphabetic principle and is foundational to using letter–sound correspondences for solving words (Bryant, Bradley, Camlean, & Crossland, 1989; Torgeson, Wagner, & Rashotte, 1997). Also, deficiency in phonological awareness has been identified as a major cause of difficulty in word recognition (Vellutino & Denckla, 1991). A subset of phonological awareness is called *phonemic* awareness in recognition of children's ability to identify and manipulate the individual sounds or phonemes in words. Phonological and phonemic awareness may involve several different ways of breaking up and analyzing words, including the ability to

- hear and identify the syllables in words;
- hear and identify initial, final, and medial sounds in words;
- hear sounds in sequence within words;
- hear and identify *onsets* (the first part of a word—*r*an, *bl*ack, *g*irl) and *rimes* (the ending part of a word—*ran*, *black*, *girl*); and
- hear distinct sounds and blend them to make words.

Children's phonological awareness is certainly supported by reading to them texts that call attention to sounds, for example, texts with alliteration, onomatopoetic words, and rhyme; however, most children will also need brief, game-like lessons that directly draw their attention to sounds in words. Through strong, clear demonstrations, they learn and apply important principles of how words work.

Visual Features of Print

The alphabetic principle means that all words within our system are based on a limited set of graphic signs. Children must learn what makes a letter distinguishable from every other letter, and that means noticing their features, even when differences are very small. It is important for children to learn the names of letters, largely because these names help them separate letters from one another and understand the language of the classroom (Pressley, 1998). Adams (1990) has said that "knowledge of letter names is the single best predictor of success in first-grade reading" (p. 21). Snow, Burns, and Griffin (1998) have reported that "the strongest predictor on its own is letter identification" (p. 21), but they cautioned that alone, this knowledge is insufficient to identify children for intervention.

Visual perception of print does not center only on the names of letters; children need to learn rapid visual identification of letters that are embedded in printed text. Also, they need to experience and internalize the directional movements needed to form letters. Some children have long acquaintance with the features of letters and find this learning easy; for

others, learning to look at print represents a major challenge in the first months of schooling.

Letter–Sound Connections

An early understanding is that print is something unique. Unlike pictures, written words are made up of graphemes (written signs) that map to speech sounds. This understanding is fundamental to visual word recognition and solving. Research has shown that early learning about the connections between letters and sounds (both simple and complex) is essential in becoming literate.

Phonics is an instructional tool—a way of teaching reading and spelling that stresses the connections between letters and sounds. Phonics is designed to teach children how to "crack the code," that is, to discover and use the relationships between letters and sounds to solve words. There is some evidence that when letters and sound are taught together, the learning is accelerated (Bradley & Bryant, 1983). For children who can recognize letters and have begun to hear sounds in words, associating these sound cues with the visual cues in letters, letter clusters, and word parts results in greater growth in phonemic awareness (Hohn & Ehri, 1983). "These findings are buttressed by others showing that knowledge of word meanings, an understanding that print conveys meaning, phonological awareness, and some understanding of how printed letters code the sounds of language contribute directly to successful reading." (Snow, Burns, & Griffin, 1998, p. 320).

It is important to note that there is not a one-to-one relationship between letters and sounds in English. Over long periods of time, pronunciation of words has changed, but we have preserved the historical spellings of some words (visually) rather than changing the spelling to be phonetically regular. So a word like *reciprocal*, becoming a noun, is *reciprocity*, preserving the *c* even though the sound changes. We also have spellings like the *gh* in *night* or *neighbor* that remain in the written word even though the *g* is no longer spoken. Upper elementary students will study historical roots and make word connections that help them remember these spelling "demons," but even young children will be learning that

- there are connections not only between letters and sounds but also between letter clusters and sounds,
- a letter or letter cluster may be associated with several different sounds within words, and
- a sound may be represented by several different letters or letter patterns (the "long *a*" sound = *-a*, *-a*[consonant]*e*, *-ay*, *-ai*, *-ei*, *eigh*, *-ey*, and so on).

Word Recognition

Children who have meaningful experiences with print usually begin to acquire a small core of words or a reading vocabulary that they know by sight; that is, they do not need to decode the words but instead use minimal visual information to recognize them as whole entities quickly and automatically, even before they have in place the skills needed for phonological decoding systems (Ehri, 1991).

These early "sight words" are very helpful in learning more about word solving. For example, when a child has read a word many times, it is phonologically more available to him as an example. Children who know how to recognize letters and have a core of high-frequency words that they can read move more easily to the application of letter–sound relationships in reading (Ehri & Wilce, 1985). Also, some English words require sight recognition (for example, *the, who*). Juel (1988) found that first graders who had good word recognition read twice as many words in books as did those who knew few words; that is, the more words a child knows, the more easily he or she is put into a position to learn a great deal more.

Should words be learned in context or in isolation? Presenting words in isolation may help students focus more on the visual details and the letter–sound associations they can bring to the task; however, interest may be higher and transfer to text reading promoted when words are presented within the context of continuous text (Ceprano, 1981). According to Adams (1990), "repeated readings and repetitive texts set the stage for the acquisition of a broad sight vocabulary" (p. 69). Within the literacy curriculum, it seems prudent to work with word recognition *both* in isolation and in the context of reading and writing.

Recommendations of the National Committee on the Prevention of Reading Difficulties in Young Children (Snow, Burns & Griffin, 1998) have included as kindergarten accomplishments the building of a repertoire of some conventionally spelled words. The New Standards Primary Literacy Standards Committee has recommended the acquisition of 10 to 20 "core" high-frequency words by the end of kindergarten (New Standards Primary Literacy Standards Committee, 1999). As children learn more, we would expect an acceleration in their word learning because they have learned *ways of learning words.*

Word Patterns

More complicated understandings are built as readers use letter–sound relationships in combination with attention to larger word parts and common spelling patterns. Using the larger pieces of words helps children rec-

ognize words more efficiently and rapidly in reading. As readers become fully aware of the orthographic features of words, they begin to see common sequences and spelling patterns (Ehri & McCormick, 1998). For example, through direct teaching, exploring words in isolation, and reading and writing words in continuous text, students may learn principles such as the following:

- When a word or syllable ends with an *e*, the preceding vowel is usually "long" (*make*). They may also learn and internalize the concept that when the word or syllable is "closed" with a consonant/vowel/consonant form, the vowel is usually "short" (*run*).
- Vowels are affected by the consonants around them; for example, the *u* in *fur* sounds different from the *u* in *nut*.
- It helps to see the word parts, such as the onset or first part (*str-*) of *string* and the last part (*-ing*).

By noticing word patterns, readers use letter–sound connections in combination with their knowledge of larger word patterns and parts, thus achieving a more efficient word-solving system (Nagy, Anderson, Schommer, Scott, & Stallman, 1989).

As they learn more about words, children see connections between them and begin to form categories of patterns that they can use flexibly while reading. Skilled readers rapidly use visual and phonological information, which they automatically and unconsciously check against the meaning of the word in the context of the text. Context cues do provide important support but are not the primary recognition strategy (Stanovich, 1991). As the process of recognizing and solving words becomes more and more automatic, word learning is rapid and attention is freed to think more deeply about the meaning of texts (Pressley, 1998).

It must be stressed that from the beginning, comprehension is the true goal of reading. Even the beginner, who must give a great deal of attention to directional movement, understand graphic forms visually, and listen carefully to corresponding sounds, must still derive meaning from the process of reading, thus learning to make all sources of information fit together.

Word Structure

As they explore how words work, children begin to connect words and in the process learn that they can change words by adding letters, letter clusters, and larger parts of words. Being able to recognize syllables, for example, helps children break down words into smaller units that are easier to analyze.

Words often have affixes, parts added before or after a word to change its meaning. An affix can be a prefix or a suffix. The word to which affixes are added can be a *base* word or a *root* word. A base word is a complete word; a root word is a part with Greek or Latin origins (such as *phon* in *telephone*). It will not be necessary for young children to make this distinction when they are beginning to learn about simple affixes, but working with suffixes and prefixes will help them to read and understand words that have them, as well as to use them accurately in writing.

These word parts that are added to base words are important to understand, because they signal meaning. Also important are inflectional endings, which may signal relationships like comparison or indicate tense. Principles related to word structure include understanding the meaning of contractions, plurals, and possessives as well as understanding how to make and use them accurately.

Through building and connecting words, young children begin to understand the operations required to add affixes and inflectional endings. Young readers also form categories of words that help them to understand spelling conventions like the formation of plurals and contractions and the structure of compound words.

Word Meaning

Decoding of words is drastically impeded if students do not actually know the words and have no idea of their meaning. We have all been subjected to hearing children "sound out" words that they have never heard before and that have no significance for them. Without meaning, the reading process will break down. To the extent that children can acquire a wide range of words that they understand in oral language, they will be advantaged when they attempt decoding strategies.

Developing word meaning involves more than vocabulary lessons. It is productive for children to look directly at individual words and discuss their meanings, but no individual can develop the large vocabulary needed by learning every word as an entity. Readers also acquire vocabulary through extensive reading; they learn more about words by experiencing and interpreting them within the context of print.

Word-Solving Actions

Word solving refers to the strategic actions that readers take when they use their phonics knowledge while reading or writing continuous text. These strategies are "in-the-head" actions that are invisible, although we can infer

them from some overt behavior; for example, children will sometimes make several attempts at words, revealing their hypotheses. Or children may work left to right on a word (sometimes called "sounding out"); they may also make connections with other words. Good readers tend to use these word-solving actions in connection with meaning and knowledge of language syntax so that the reading is smoother, makes sense, and is accurate. The reader is making all systems fit. Most kindergarten children are only beginning to construct these sophisticated systems, but they are reaching for them. It is especially important for kindergarten children to understand that every bit of information they learn is highly useful in literacy processes.

As kindergartners, most children have begun to read very simple texts of one or two lines. This active processing of text enables children to simultaneously put into action all of the information they have been gathering about letters, sounds, and words. They begin, as Clay (2001) has said, to "assemble working systems" for constructing meaning from print. As first graders, they expand these working systems to read longer stretches of texts that have more complex meaning.

The typical pattern of growth in first grade is truly remarkable. Children begin the year either not reading or reading, with pointing, a few lines of print containing very easy words. They read aloud and use pictures in combination with print. We know that they monitor and self-correct their reading, because these behaviors are overt. By the end of Grade 1, most can read simple chapter books that have many multisyllable words and many lines of print (see Fountas & Pinnell, 1996; Pinnell & Fountas, 1999). They are, for the most part, reading silently and do not need to depend on the pictures to learn about or solve the words in texts, although illustrations do extend meaning and provide enjoyment. They read fluently, recognizing most words quickly and automatically and solving others with a range of strategies. They can solve words by how they look, by using letters and sounds, and by making connections between words. They check letter–sound and word knowledge against their sense of meaning and of how language should sound. They read with phrasing, using simple punctuation as a guide. As they read, they notice, make sense of, and learn the meaning of new words, expanding their vocabularies. These children are solving words "on the run" while reading for meaning.

Most second graders are ready to spend a great deal of time reading, applying their existing strategies to longer stretches of print and more challenging texts. They are expanding in their ability to take words apart, using a range of word-solving skills while reading for meaning. They use visual features of print, punctuation, meaning, and language syntax within a smoothly operating system that is always directed toward comprehending. Their comprehension includes a range of in-the-head strategies, for example,

- solving words;
- monitoring and self-correcting reading (using various sources of information);
- gathering essential information;
- predicting what will come next within a word, within phrases, and across a text;
- maintaining fluency and phrasing;
- adjusting reading to different purposes and to the structure of different texts;
- making connections between the text and their own personal experience, other texts they have read, and their knowledge of the world;
- inferring, to go beyond the words of a given texts to know what is implied but not stated;
- summarizing, to accumulate information in summary form so that it can be remembered and applied to reading the rest of the text;
- synthesizing, to adjust their own knowledge as they learn from the text;
- analyzing, to examine literary elements of text (such as language features); and
- criticizing, to make judgments about any aspect of the text.

In first and second grade, students may not be applying such in-the-head strategies in sophisticated ways, but the thinking that they do even on simple texts is vital to their continued development as readers. As they encounter new demands in texts that are slightly more difficult, they continually increase their ability to solve words while reading for the meaning of texts and expanding on it.

INSTRUCTIONAL APPROACHES TO FOSTER A BROAD RANGE OF LANGUAGE AND LITERACY LEARNING

Research on the reading process and on how children acquire it has provided a great deal of valuable information for us as teachers. We have also profited from different interpretations of exactly what the results of research mean for educational practice. It appears that children need explicit, clear, direct teaching of valuable concepts, but they also need opportunities to apply their knowledge while reading continuous text with meaning in mind. Moreover, children need opportunities to combine reading and writing, because learning in one area supports the other.

The Question of "Balance"

Recently experts have called for "balanced" reading programs; balance does not mean a "little of this and a little of that." Addressing reading interventions, Lyons and Moats (1997) say that an "important dimension" of an effective program "is the extent to which all components of a complete, balanced approach are included in each lesson, regardless of the student's reading level" (p. 581). They criticize intervention studies that "overemphasize one component to the detriment of others" (p. 581) and use as an example the emphasis placed on phonological awareness and decoding with insufficient attention to applying these skills in text reading. Balance is related to the transfer of skills from one area to another, especially "explicitly integrating learned phonological concepts into word- and text-reading tasks" (p. 581).

When a term like "balance" becomes the current buzzword, it usually holds different meanings for different people. The metaphor of "balance" implies two items on a scale holding equal weight; as such, the term may not be adequate to describe the comprehensive and integrated nature of a good literacy program. Perhaps no single term should be used, since connotations are rapidly attached to every named approach.

Components of a Comprehensive Program

Within a comprehensive literacy program (see Fountas & Pinnell, 1996; also see Pinnell & Fountas, 1998), a range of instructional contexts are designed to support children's learning in many different ways. In Table 9.2, I have outlined such a range organized into three categories: language/word study, reading, and writing. With this outline in the background, I will discuss several contexts at each grade level. We can organize these contexts as *reading, writing,* and *word study.*

Reading

Reading to children provides models of complex written language that children can internalize. They learn how stories and informational texts are organized, and they expand their vocabulary. *Reading with* children (shared reading) helps them learn how print works, learn high-frequency words, and learn about punctuation.

Guided reading brings children who have similar needs together for small-group instruction (Fountas & Pinnell, 1996, 2000; Reutzel, Hollingsworth, & Eldredge, 1994). The teacher chooses a book that is challenging for the group but within their control, so that they can increase their read-

Table 9.2. A Comprehensive and Integrated Language/Literacy Framework for Grades K–2

Language/Word Study *[30–60 minutes—whole-class instruction]*	
Interactive Read-Aloud	Interaction, discussion, and engagement with fiction and nonfiction texts read by the teacher [K–2].*
Shared/Modeled Reading	Unison reading, with interpretation, of a text [K–2].
Shared, Interactive Writing	Group composition and construction of a common text, with embedded specific instruction in conventions, phonics, and text structure, and attention to composition and structure of many genres of written text [K–1; for small, needs-based groups in 2].
Conventional Uses of Language	Brief, direct teaching of conventions such as editing, punctuation, handwriting, and word choice [K–2].
Word Study	Explicit minilesson on a spelling/phonics principle, followed by application and activity [K–2]. Add 5 days of systematic, active word study [1–2]: (1) choose, write, and build words; (2) look, say, cover, write, check; (3) buddy check; (4) make connections; and (5) buddy test.
Reading Workshop *[60 minutes—whole-class, small group, and individual instruction]*	
(1) Independent Reading and/or Independent Work	Independent reading of student-selected texts (with teacher guidance) accompanied by writing or a variety of independent work. • Independent work, including reading, writing, word exploration, phonics games and applications, listening [K–1]. • Explicit minilesson on any aspect of reading skills or strategies, followed by reading and writing in response to reading [2]. • Sharing and conclusion to reinforce learning [K–2].
(2) Guided Reading	Small, homogeneous groups reading leveled texts within a structured, teacher-directed lesson [about middle of K–2]. • Introducing the text to point out important aspects (such as organization, challenging concepts/words) to help students process a text more challenging than they can read independently. Students' reading of the text individually, softly, or silently for themselves while the teacher observes and interacts to teach strategies. • Revisiting and discussing the meaning of the text to check on and extend comprehension and engagement. • Teaching processing strategies through examples from the text. • Extending the meaning of the text through writing, charting, gathering further information, or engaging in extended discussion. • Closely examining the structure and characteristics of words (using magnet letters or white board; preplanned and unrelated to the text just read).

Table 9.2. A Comprehensive and Integrated Language/Literacy Framework for Grades K–2 (Cont.)

(3) Literature Study	Small, heterogeneous groups engaging in deep discussions of literary texts [1–2]. • Selecting texts (usually student-selected) and forming groups. • Preparing for discussion by reading, thinking about the text, and making notes so that they can get back to the text for evidence during the discussion. • Working in small groups to discuss the text with teacher support. • Sharing understandings through a response or cooperative project—writing, charting, diagramming, interpreting orally, doing research, or extending the discussion.
Writing Workshop *[60 minutes—whole-class, small group, and individual instruction]*	
(1) Independent Writing	Student engagement in the writing process to compose and write a variety of genres [K–2]. • Specific, short minilesson focusing on conventions, skills, or craft of writing [whole class]. • *Individual* writing with teacher support [K–1]. • *Individual*, silent writing with teacher conferring—writer's notebook, discovery draft, revising for subsequent drafts, editing, and producing final drafts (occasionally publishing) [2]. Coming together as a community to share writing. [K–2].
(2) Guided Writing	Small, needs-based groups convened for direct teaching of conventions or craft of writing [1–2].
(3) Investigations	Content area research, reading, writing, and reporting [toward end of Grade 2].

**Note.* Options vary according to the age of students.

ing powers. Skilled teaching guides them in the development of effective reading strategies, including both comprehension and word solving. Guided reading rests on a framework that provides support for readers before, during, and after reading (see Table 9.3).

Guided reading is designed to "up the ante" in that the teacher selects and introduces a text that is just beyond the level of text that children can read completely independently. Through explicit instruction, the teacher enables students to meet the demands of a more challenging text and, in the process, expand their reading abilities. A guided reading lesson consists of the following steps:

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Table 9.3. Framework for a Guided Reading Lesson

Step	*Teacher Actions*
Introducing the Text	The teacher selects and introduces the text, • presenting the title, author, and main idea; • asking students to think about the structure of the text and asking them to say or hear the language; and • pointing out important concepts and words.
Reading the Text	The students read the text softly or silently to themselves while the teacher interacts and supports.
Revisiting and Discussing the Text	Students and teacher revisit the text to talk about the meaning and the language.
Teaching for Processing Strategies	The teacher targets an important reading processing strategy to demonstrate and help students apply the strategy to this text and others.
Extending the Meaning of the Text	The teacher provides opportunity for students to extend the meaning of the text through writing, diagramming, art, or other media.
Word Work	The teacher engages children in looking at aspects of words. This work is preplanned on the basis of children's needs to understand print.

1. The teacher selects a text that children can read with support.
2. The teacher introduces the text, communicating the meaning and organization of the text, introducing some unfamiliar words or concepts, and drawing children's attention to some of the language.
3. Each child in the group reads the text individually while the teacher observes and sometimes interacts briefly to prompt for strategy use.
4. The children and teacher discuss the meaning of the text.
5. The teacher provides some direct and explicit teaching of processing strategies.
6. The teacher may have children extend the meaning of the text through writing or drawing.
7. The teacher may spend one to two minutes on explicit word work that is related to children's growing word-solving strategies but not to the words in the text previously read.

Some excerpts from the introduction to a guided reading lesson are presented in Figure 9.1.

Tanya was introducing *In the Forest* (Schiller, 2000) to a small group of kindergarten children at the end of the school year. In this simple text, a question is asked on every page: "What do you see?" The answer is an animal either in a location or doing something. On the last page, the text says, "I see the forest. What do you see?" There are pictures of all the animals.

Tanya: The title of the book is *In the Forest*. It's about the forest. Do any of you know what a forest is?

Da-Shawn: It's a place where there are trees and animals.

Trisa: It's the woods.

Tanya: Yes, it's a place with lots of trees and animals live there. Can you think what some of those animals might be?

Charla: Deer.

Fara: Bears!

Cecil: Snakes?

Tanya: All of those animals might be in the forest, so you have to be thinking as you read about what would be possible. In this book, the writer is talking about what you see in the forest. On every page, it says, "What do you see?" And, the answer is that "I see something." Let's look at the pages and see what those things might be. Look at page 2. What do you see?

Fara: That's a tree.

Tanya: You're right, and it says, "I see a tree." Can you find that? [Children respond.] On the next page, the question is, "What do you see?" What do you see there?

Da-Shawn: A deer. [Reading.] I see a deer drinking water.

Tanya: Yes, that's what it says. "I see a deer drinking water." On the rest of the pages of this book, it tells the name of an animal and something that animal is doing. Turn the page. That's a rabbit. It says, "I see a rabbit in the grass." Look at the next page. What is that animal?

Children: A bear.

Tanya: What is he doing?

Cecil: I think there are some berries.

Tanya: That's right. The bear is eating berries. Let's all read that together.

Children: "What do you see? I see a bear eating berries."

Tanya: You're going to read this whole book. Let's name some of the animals. You know what that animal is. Look, he's sleeping in the tree. And look, there's a squirrel climbing the tree. Now, you read this book softly to yourself. I'll come around and listen to your reading.

Figure 9.1. A guided reading lesson: *In the Forest.* Kindergarten—April.

As the lesson continued, Tanya's students read the text with high accuracy; afterwards there was a discussion about the kinds of animals that live in the forest, including those in the forest and additional animals that might appear there. She did not extend the text through writing (for example, she could have had children list animals in the forest), but she did involve students in word work. For one or two minutes of preplanned word work, Tanya drew students' attention to words that begin with *c* and words that begin with *ch*. On a magnetic board, she built *can*, *car*, and *cat*, and her students talked about the sound of *c*. Then, she built *chair* and *chick* and explained that when *c* and *h* are together in words, it makes a different sound.

Successful instruction in guided reading depends on selecting appropriate texts day after day. If you are a teacher beginning to use small-group

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reading instruction in your classroom, you will find it very helpful to have books organized along a gradient of difficulty. Having a leveled book collection does not take the place of text selection, but it does make it easier. Matching books to readers requires two kinds of knowledge:

- *Knowing the books.* So it pays to take the time to read and reflect on a wide variety of books, placing them in order of difficulty through analysis of many factors.
- *Knowing the readers.* Close observation of young readers' behaviors will help determine whether or not a text is "just right." A general rule is that the reader will be able to read the book at about 90 to 95% accuracy; that is, the reader will know or be able to solve most of the words. But there is more to matching than accuracy. The characteristics of the book should provide a chance for the reader to problem-solve words, search for information, and check. Moreover, the reader should understand the ideas and meaning of the story or informational piece.

It is obvious that matching books to readers involves the application of a complex set of understandings. Teaching skill is built over time through observing many readers and interacting with them around books. Meanwhile, a gradient of texts can help in providing a book that is not too easy and not too hard—just right to support reading development.

Independent reading gives children a chance to get "mileage" as readers by reading a great deal of material both at home and at school. In kindergarten and Grade 1, children read and reread texts in "browsing boxes" that are created by teachers to help readers solidify their learning. For children in Grade 2–3, the time is increased to accommodate children's growing ability to read longer texts silently for extended periods of time.

Writing

Students also need many opportunities to write each day. Group writings such as language experience, *shared writing,* and *interactive writing* involve children in highly supported group writing and reading (McCarrier, Pinnell, & Fountas, 2000). Students produce a common text, and within the process they learn that writing has a purpose and learn how to compose an extended piece of writing. When you work with a group to compose stories and informational pieces on an easel, you can demonstrate important concepts about how print works, and you can also illustrate how to spell words.

Through *writing workshop,* children learn specific writing strategies and produce their own independent pieces of writing. Writing workshop includes the following elements:

1. The teacher provides a brief lesson on any aspect of writing—conventions, craft, or genre.
2. The teacher may provide brief "writer talks" about children's favorite writers to help children understand how writers work.
3. Children work at their own pieces of writing while the teacher interacts with individuals to support and extend their skills.
4. The teacher may work with a small, needs-based group, using interactive writing or guided writing.
5. The period ends with children sharing their work, which may refer to the brief lesson.

It is important for children to write a range of pieces, including informational writing, personal narratives, fiction, and poetry.

Word Study

Finally, a balanced curriculum includes direct attention to phonics and spelling (Pinnell & Fountas, 1999). A word-study program uses a *minilesson* structure followed by application. The minilesson is based on what students need to learn about letters, sounds, and words. The emphasis is on teaching important principles, so that students become "word solvers" who know the inner workings of words.

Minilessons may focus on oral hearing of the sounds in words, on looking at letters, on letter–sound relationships, on spelling patterns, or any other aspect of how words work. A minilesson is a brief, powerful piece of instruction provided by the teacher.

In the minilesson shown in Figure 9.2, Tanya drew children's attention to the beginning sounds of words. Later, she read aloud several times the book *Little Robin Redbreast: Mother Goose Rhyme* (Halpern, 1994), in which beginning and ending sounds are emphasized. Later in the week, she repeated the lesson to emphasize other beginning sounds. In shared reading, she masked words in the text, had children say the word and predict the beginning sound, and then removed the mask to check it. In guided reading, she drew children's attention to beginning sounds in words, having them say the word and then checking the first letter to be sure there was a match. In interactive and independent writing, she encouraged children to say the word before writing and predict the first letter. For home connections, she gave each child a paper with a key picture and asked them to find pictures or objects at home that would match the beginning sounds.

Tanya had decided that her kindergarten students needed to tidy up their knowledge and use of first letters and sounds in words. They had worked extensively with their names and had engaged in interactive writing. She placed enlarged picture cards along the top of her pocket chart: *bear, hat, mitten*. She had other picture cards ready to use: *banana, bear, bat, box, bird; hat, horse, helicopter, heart, hook; mouse, moon, mitten, motorcycle, monkey*.

Tanya: Say the word *bear* and think about the first sound you hear.

Children: *Bear*.

Tanya: What do you hear at the beginning of the word?

Children: *b*.

Tanya: That's right, it's a *b* (and she also isolated the /b/ sound). When we say the word *bear*, we can hear the sound at the beginning. Say this word: *banana*.

Children: *Banana*.

Tanya: Does it have the same sound at the beginning as *bear*?

Children: Yes.

Tanya: Now say both words to check—*bear, banana*. [Children respond.]

The teacher helped the children think about one or two more *b* words and then repeated the process for *h* and *m* words. Then she mixed up the pile of pictures and went through them one at a time, demonstrating how to say the word and decide whether the picture card would go under the *bear*, *hat*, or *mitten* card. She encouraged them to check their categories by saying both words.

At the end of the lesson, the teacher and children had categorized all of the picture cards. Then Tanya helped them check their columns by saying the words and evaluating whether they fit. Finally the children independently (in the word-study center) repeated the exercise, working with partners.

At the end of the reading block, the teacher convened students and showed the categorized words in the pocket chart. She asked children to discuss what they noticed about the beginning sounds of words and demonstrated by making some comments herself. Her young students responded with the following:

- *Bear* and *bird* start the same.
- *Hat* and *mitten* have different sounds at the beginning.
- *Hat* has an *h* at the beginning and a *t* at the end.
- If it's a *mouse*, it starts like *moon*, but if it's *rat*, it doesn't.

Figure 9.2. A Minilesson on initial sounds in words.

Achieving a "Balance"

It is obvious that a comprehensive literacy framework includes a range of reading and writing contexts. Some involve demonstrating and showing students what to do; others involve students in discovering principles and engaging in independent work while the teacher provides supportive guidance. Both are necessary.

Again, by combining in use the knowledge they have of language, words, letters, sounds, and the way print works, kindergartners begin to read very simple texts of one or two lines. This active processing of text enables early readers to put into practice all of the information they have been gathering and begin to assemble working systems for constructing meaning from print.

PROFESSIONAL DEVELOPMENT

In *By Different Paths to Common Outcomes*, Clay (1998) argues that good readers have arrived at approximately the same place in that they have devel-

oped an integrated range of cognitive strategies that make up a dynamic reading process. This learned system incorporates within it the ability to constantly expand reading strategies and use them with flexibility. At the same time, she says, learners may take different paths to these "common outcomes." Instruction meets the readers where they are and takes them where they need to go in the development of a reading process. Consider these two children, who are in the same first-grade classroom:

- Kristen enjoys stories and joins in enthusiastically when adults read to her. She notices illustrations, makes predictions, and reproduces even tricky language structures while pretending to read. When faced with reading simple, one-line texts, she freely invents words and pays little attention to the letters and sounds. She does not point to words or focus on letters. She relies heavily on remembering language patterns. Although she knows the alphabet and some letter–sound relationships, her writing consists largely of strings of letters, mostly *k*s, *s*s, and *t*s.
- Javon knows the alphabet and some related sounds. When faced with reading simple, one-line texts, he tries to sound out each word but often substitutes words that start with the same letter but don't make sense. His reading is slow and choppy; he points to each word, but the text is not a meaningful whole to him.

Of course, the differences between children are not always so extreme, but just about every first-grade class will include readers like Kristen and Javon.

Both children need specific instruction on letters, words, and how they work. Kristen needs to learn how to look at print, to acquire more knowledge of letter–sound relationships, and to acquire a core of high-frequency words that can serve as anchors. Most of all, she needs instruction in *how to use* this information within the context of reading continuous text. Javon needs to continue developing his ability to take words apart by learning about word structure and patterns of letters that are connected to sounds within words; but he also needs to learn to check his word solving against meaning and language that sound right to him.

Both Javon and Kristen are having difficulty reading, but their problems are different. In kindergarten, Javon is probably considered to be making better progress than Kristen; he knows more about print and will score higher on some assessments. But if he continues to read without noticing the meaning loss that should prompt another attempt at word solving, he will not become a competent reader. Javon needs to use letter–sound information *in combination* with searching for meaning.

Also within the same class are many children who are beginning to solve words while reading continuous text with meaning as a guide. All of the 20 to 30 children are developing in their own individual ways. Instruction

must account for these different paths and do so within the parameters of the school day and group teaching. In so saying, I realize that some children, perhaps both Kristen and Javon, will need intensive tutoring in addition to good classroom teaching.

The complex skills and understandings that teachers require are impossible to develop within one or two university courses. Publishers' materials and curriculum guides offer a ladder of support for teachers as they engage in this complex process, but ultimately, good decisions regarding individuals and groups of children are required. Effective instruction in reading depends on teachers' abilities to think about and learn from teaching. Given the complexity of the reading process and of the way literacy is learned, teachers must know

- the complex nature of the reading process;
- how reading is *learned*, including many paths to literacy development—that is, how children acquire and relate understandings about literacy;
- the strengths and understandings of their students; and
- how to determine what children *need to know next* in building a reading process.

At the same time, teachers must be good organizers and managers of the life within a small classroom where 20 to 30 people must learn to work together daily. You can have good management without effective teaching; but you cannot have good teaching without effective management.

Teachers' theories of the reading process are tentatively held, because they are always matching their understandings against the progress of their students. Good teachers have learned to increase their effectiveness by learning from their teaching; they carefully observe their students for behavioral evidence of learning in response to instruction. These observations serve as a way of testing their teaching and refining it. Guiding that learning is, in itself, a daunting challenge for teacher educators, administrators, and staff developers.

For the last decade I have been working with colleagues to create and implement comprehensive school development projects that result in higher literacy achievement. Schools in our literacy initiative, the Literacy Collaborative, are characterized by the existence of several interrelated factors, all of which have been found to be essential for significant school improvement. Ten essential characteristics are presented in Figure 9.3 and discussed below.

The Literacy Collaborative is *not* an approach to teaching reading. It is a comprehensive, systematic school development program that utilizes a range of research-based practices that are changed as we learn more about how to teach children to read and write. Our systemic approach is summarized in

1. Teachers in classrooms implement the range of research-based approaches that are included in a language and literacy framework, either at primary grades or at all grades of the elementary school. The framework includes instruction in reading, writing, language, and word study.
2. A high priority is placed on time for teaching and learning, with at least 2½ hours designated for the language and literacy framework daily in all classrooms. One hour of uninterrupted time is available for reading and one hour for writing.
3. The school has a literacy coordinator who has successfully completed the initial training program at a Literacy Collaborative university or district-level training program.
4. The literacy coordinator is based in the school and provides professional development for teachers as well as teaching children for part of the day.
5. There is a school-based literacy team that includes the principal, the literacy coordinator(s), and teachers representing the grade levels involved.
6. Teachers in the school participate in intensive training and are coached in their classroom work by the literacy coordinator.
7. After initial training, teachers participate in a variety of ongoing professional-development opportunities, including regular meetings, coaching, study groups, action research, and others.
8. Sufficient materials and supplies are provided to support literacy instruction, which may include a school book room that houses an extensive collection of leveled books for guided reading, as well as rich classroom collections of children's literature.
9. Reading Recovery is provided as a safety net for first graders who need extra, intensive tutoring in addition to good classroom instruction; other services are provided at various grade levels.
10. There is a parent outreach program that includes books to promote home reading.

Figure 9.3. What is a Literacy Collaborative School?

the 10 characteristics that define the program. Classrooms are characterized by the display of a wide variety of print and by rich collections of books and other reading materials. Teachers reserve a large amount of quality time for reading and writing, and they teach explicitly and intensively, in different ways. The curriculum is based on a comprehensive language and literacy framework that includes a wide range of reading and writing instruction. The Literacy Collaborative curriculum is guided by continuous assessment consistent with recommended national standards for literacy achievement (New Standards Primary Literacy Standards Committee, 1999). Program evaluation results indicate that in the 4th year of implementation, 78% of the schools in the network show upward trends on standardized test scores in reading. The availability of coaching by an in-school staff developer is a significant factor in these results.

The key delivery system for our literacy initiative is a dynamic professional-development program. A literacy coordinator is trained for each school. This full-time staff developer is available to teachers on a daily basis. He or she has a multifaceted role (see Figure 9.4).

Having a literacy coordinator in the school brings professional development to the teachers. Content covered in class sessions moves into the

- Providing an onsite initial training course of 40+ hours for classroom teachers in the building during the first year, 20+ hours the following year, and ongoing development during future years.
- Teaching children on a daily basis.
- Providing in-class coaching for teachers.
- Interacting informally with teachers to answer questions and provide advice and support.
- Working with the principal and leadership team.
- Supervising the data collection and helping the staff look at evaluation results.
- Assuring that the school has sufficient materials, including a shared, leveled book collection.

Figure 9.4. Role of the Literacy Coordinator.

classroom, because the support and coaching are available. In addition, teachers report that informal interactions with literacy coordinators are most valuable to them; that is, through the school day they can engage in brief conversations that provide advice and feedback on teaching decisions. With a trained literacy coordinator in place, the school builds capacity for continuous improvement. A large body of research has revealed that teacher training is the critical factor in making a difference in students' learning (Darling-Hammond, 1996).

Every school in our literacy initiative provides Reading Recovery, a one-to-one tutoring program, as a safety net for first-grade children who are having extreme difficulty in learning to read and write. Kristen and Javon, mentioned earlier, would be tested at entry to first grade for entry to Reading Recovery and would then receive one-to-one tutoring. The results of this intensive early-intervention program suggest that it works powerfully in connection with high-quality classroom teaching. Reading Recovery's record indicates that for children who have a complete program (12 to 20 weeks of daily 30-minute lessons), 80% will make accelerated progress, catch up with their first-grade peers, and be able to profit from classroom instruction (Askew, Fountas, Lyons, Pinnell, and Schmitt, 1999). Schools make a commitment to providing Reading Recovery for all children who are showing difficulty in the first grade. In addition, the school provides ongoing special services for children who continue to need assistance, often those who move into the school after the first-grade year.

Finally, the schools make a commitment to communication and collaboration with parents and other caregivers as well as to the wider school community. Throughout the elementary grades, there is emphasis not only on in-school reading but also on students' developing the habit of reading at home. Research indicates the importance of home reading. For example, researchers have found a high relationship between the number of words students read and scores on standardized tests (Anderson, Wilson, & Fielding, 1998).

No single one of these factors alone creates educational excellence that will increase achievement; but together, the results are promising. Longitudinal research indicates that consistent, intensive classroom instruction combined with safety nets like Reading Recovery results in higher achievement and fewer at-risk students (Rowe, 1995). In addition, educational improvement requires teamwork, a common vision, systemic change, and ongoing professional development (Wilson & Daviss, 1994).

A good staff-development program provides support systems built around five components of learning. Good programs

- provide basic materials and clear demonstrations of processes,
- engage learners in active exploration of the approach in a risk-free environment,
- establish the rationales by clarifying reasons for each element (including research) of the approach,
- support participants as they try out the approach for themselves, and
- create a climate of and expectations for ongoing learning so that further inquiry within the approach is the responsibility of every professional in the school.

Conclusion

We may now know a great deal about how children learn to read; and we may even have a pretty clear picture about what an effective classroom looks like, how it works, and what good first teaching really means. Putting this knowledge into action in schools, however, is not easy or simple. The task will require far more than an inservice session (or even a series of sessions) for delivering information to teachers. A broad range of teacher education and school-development strategies will be required. Learning to teach must be seen as career-long learning and skill development rather than a finished product. Only with this change in perspective can we put what we know into action in our schools.

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CHAPTER 10

CONCLUSIONS AND RECOMMENDATIONS

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As customary at book-conferences sponsored by the Laboratory for Student Success (LSS), the Mid-Atlantic Regional Educational Laboratory, draft versions of the foregoing chapters were precirculated to the chapter authors, other scholars, and educators who gathered to discuss them in both small groups and in larger plenary sessions. In this case, about 90 schoolteachers, parents, administrators, state and federal education officials, reading experts, and scholars in other disciplines discussed the papers and issues related to reading instruction in small groups, achieved consensus on recommendations, and reported them in a final plenary session.

When we formulated the plans for the conference, we selected topics on the basis of two criteria—that they were important for reading instruction and that the research had something to say about them. These topics were comprehension, motivation, teacher education, reading difficulties, interventions, policy issues, and computer technology. These all are important issues and certainly merit the attention of everyone involved in reading instruction. The authors were asked to address *successful* practices in each of these areas. They accomplished that task.

As the following summary shows, because the small groups were not limited to discussion of the paper topics, their conversation went beyond those issues, indicating just how complex a process reading really is. What surprised us most was that there were many concerns reflected in the discussions that were not addressed in the papers that became the chapters in this book. For example, there was relatively little discussion of the successful

practices. Instead, the focus seemed to be on what we still need to know. This probably reflects the uneasiness that many feel about reading instruction. Not surprisingly, many of the concerns raised in discussion are not well researched. Hence the call for more research focused on these problems.

Rather than a cause for disappointment, this discussion of concerns is valuable. It clearly indicates how much there is yet to be done. The summary of recommendations lays out many of those issues that were not formally addressed in the chapters. Many of the problems discussed would require close working relationships among teachers, parents, administrators, and researchers. The payoff would be large: A concerted effort would certainly make much progress in addressing the concerns of the conference participants.

Although considerable consensus was achieved within each small work group, not everyone agreed on all points, nor did the groups focus on identical questions and issues. The oral and written group reports, nonetheless, echoed several recurring themes and common recommendations.

RESEARCH AND INSTRUCTION

The research discussed in the conference papers offers many evidence-based conclusions and recommendations with respect to instruction and research. Even so, the conferees singled out several points that they believed deserve priority.

More research is needed on what knowledge students have, so that teachers can better know what their students need to learn, particularly at the high-school level, where more and more students need remediation. Indeed, research on remediation in general in addition to problem prevention should have high priority.

Researchers and professional developers should help teachers learn how and when to use specific teaching strategies. Teachers also need help in adopting effective strategies into their regular teaching practice. Some teachers, developers, and researchers have demonstrated such effective strategy utilization, but research is needed on how best to bring such utilization to scale.

Scholars and developers as well as educators should think about how to attain the several ends of reading instruction simultaneously. In particular, instruction should foster both comprehension and critical thinking. A school's reading program should focus on closing the gap between good and poor learners, but not at the expense of high-level thinking. To accomplish more than previously, the links between reading and writing should be fostered. Teachers at all levels, moreover, must be able to make time for all components of good reading instruction in their classrooms.

Some researchers neglect the clients' views. They should ask students about what works and about how they learn to read. They should examine student performance and work products for useful information. Students can be truthful sources of data

Finally, researchers and educators should collaborate. Partnerships among school districts, local universities, and local education associations can enhance and inform research. Educators themselves should be encouraged to do more field-based research in their classrooms, even if it does not reach the level of peer-reviewed research. They can share their findings in newsletters and on Internet websites.

ASSESSMENT

In the teaching of reading, the state of assessment practice lags behind the state of the art, and assessment deserves close attention and improvement. What is clearly needed is comprehensive, longitudinal assessment of students as well as periodic assessment of reading professionals—teachers, reading specialists, and administrators. It would be reasonable, of course, to provide comprehensive professional development prior to assessing professional competencies.

The nation, states, and schools are presently focused on standards, which may have potentially constructive consequences for reading. Teachers, for example, might benefit greatly from having additional diagnostic information on their students' reading strengths and weaknesses. Since they should regularly assess their students, moreover, classroom and external assessments should be better aligned.

PROFESSIONAL DEVELOPMENT

The design of professional development for literacy education and in particular for reading requires rethinking. Most likely to build capacity within schools is a comprehensive approach not only for teachers but also for reading specialists and administrators.

Staff development should be sustained, focused, and continuous, whether delivered by district- or school-level staff. It works best when it is tailored to match the needs of educators and students in each school. For this reason, professional development needs to be focused on identified school and student needs rather than on recent fads.

State-of-the-art practices should be modeled and encouraged. After demonstrations by exemplary teachers, however, principals and teachers may be

intimidated or misunderstand what they have seen. They will benefit by follow-up debriefing and discussion to avoid reaching wrong conclusions.

Staff development should not be done halfway; successful implementation of the training requires follow-up support, coaching at the classroom level, and facilitation of support groups. Capacity can also be fostered by developing cadres of in-house staff developers who can garner recognition and prestige. Reading competence can also be furthered by integrating reading and literacy ideals and practices into content areas such as social studies and science.

At the same time, individual teachers have needs: They need autonomy, particularly control over program decisions and teaching context. They need time to collaborate with their colleagues and researchers and to reflect on their own practices. Districts should work to define teacher talent and recruit able reading teachers. Teacher compensation should be raised to give incentives for professional growth.

Though they lacked unanimity, in one group a few members went further: To accomplish what is needed in reading, teaching may need to become a 12-month job with extra days for professional development. It was also suggested that all first-grade teachers should have a reading-specialist degree. To maintain a baseline level for professional development, only certified teachers should be employed in the classrooms.

RESOURCES

More efforts should be made to invest in early intervention to avoid or remediate reading difficulties. Yet the middle-school schedule too should reflect a high priority for literacy as indicated by increased time for intensive reading instruction and small reading groups.

Intensive intervention modes for special-needs students of reading instruction should be implemented. There should be more support for enabling all groups, including second-language learners, to acquire literacy.

Teachers and schools should be provided with an abundance and variety of reading resources, including appropriate books. Reading materials should be varied in content, genre, challenge level, and format (e.g., written or electronic). Each school should have high-quality school and classroom libraries.

PARENTS AND COMMUNITY

Parents should be provided with selected parts of the knowledge base in reading that teachers and reading experts have, which will enable parents

to foster their children's reading abilities. Parents with preschool children are particularly likely to benefit. Preschool programs should provide literature-rich early environments, including read-aloud activities in homes, schools, and communities.

There should be a support system for increasing parental understanding and access to resources, including materials for home use, training in mentoring, and increased teacher–parent communication. Funds should be increased to support local libraries in urban communities, and librarians should work to increase library access in these and other communities. At the same time, parents should have more accountability for helping their children achieve reading goals.

COMMUNICATION

The public and legislators need to know the value of financial investment in reading research and professional development. Elected officials respond to pressure from advocates; the more pressure they feel, the more likely they are to respond. Advocacy in this regard, however, should be based on evidence. An example is successful early intervention in the lives of children placed at risk for school failure.

The field of reading instruction would benefit from ways to synthesize research findings so that they are more accessible to practitioners. Reading specialists, school psychologists, and others similarly require accessible research so that they can demonstrate to practitioners what the findings look like in classroom settings.

BEYOND THE CONFERENCE: A LIVING DOCUMENT

A summary of the small groups' recommendations was placed on the Internet immediately following the conference in order to foster a continuing dialogue among scholars, policymakers, and others with a stake in reading instruction. Along with the conference papers and responses from participants, the recommendations thus formed a "Living Document" allowing for the conference to have sustained impact. The Laboratory for Student Success plans to place such Living Documents on its website (www.temple.edu/lss) after future conferences on educational issues and to use the ensuing discussion to forge better links between research and practice.

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